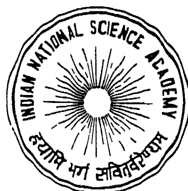
HISTORY OF MEDICINE IN INDIA



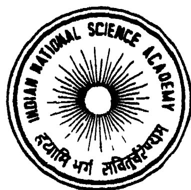
INDIAN NATIONAL SCIENCE ACADEMY
NEW DELHI

The monograph, 'History of Medicine in India' is a product of a collaborative effort initiated by the Indian National Commission for History of Science Twenty Indian and foreign experts have contributed to this volume It makes a systematic survey of Pre-Vedic, Vedic and Post-Vedic literature dealing with medicine, and have thrown important light on different traditions of Ayurveda, medicinal plants, general medicine, preventive and social medicine, surgery, obstetrics and gynecology, pediatrics, promotive therapy, toxicology, pharmacology, and other topics besides basic concepts of Ayurveda and Siddha medicine The role of Indian medicine with respect to Indo-Tibet and Indo-Arab relations and the world as a whole have also been highlighted in a more perspective manner

HISTORY OF MEDICINE IN INDIA

(From Antiquity to 1000 A.D.)

Editor
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FOREWORD

Evidence for the existence of well organized system of medicine in India can be traced to archaeological remains in Harappa and Mohenjodaro. Thus in the Indus Valley Civilization there prevailed a system of medicine in which drugs of vegetable, animal and mineral origin were used The seal of Paśupati, the Lord of animals, suggests a close link with the tradition in which Rudra is stated to have been the first divine physician presumably earlier than Aśvins, the twin vedic physicians. According to a view, the twins represented the two broad specialities — medicine and surgery. The *Osadhisukta* of the *Rgveda* is the oldest document of the knowledge about plants and herbal medicine The concept of Agni and Soma which formed the nucleus of physiology and reproduction has been described in detail in the *Rgveda.* In the *Atharvaveda* we come across a more advanced picture of the status of medicine. The detailed enumeration of the body-parts shows the developed knowledge of Anatomy A number of disease-syndromes were defined such as *harima* (jaundice), *hrdyota* and *hrdayāmaya* (cardiac disorders), *kilāsa* (vitiligo), *takman* (malaria), *kustha* (leprosy), *apacī* (scrofula) *rājayaksmā* (consumption), visalpaka (erysipelas), *aśmarī* (renal calculus), *unmāda* (insanity) etc There is a detailed description of helminthic infestation (*krmiroga*) which indicate their prevalence There are some diseases like *jāyānya* and *ksetriya* whose identity is controversial Similarly, there is an increased number of medicinal plants with introduction of many new items such as *ajaśrngī apāmārga, kanaknaka, kustha, cipudru, jangida, parna, daśavrksa, varana* etc It would thus be a grave injustice to suggest that the Atharvavedic medicine was simply magical as there are evidences of internal use of drugs and also manipulation like catheterisation in case of urinary obstruction

Medicine in India owes much to the tradition of *Atharvaveda* of which Āyurveda is said as an *Upaveda* Gradually with the advent of the scientific spirit the basic concepts about physiology, pathology and pharmacology, founded earlier, were developed further and were crystallized during the period of Samhitās of Caraka and Suśruta which were regarded as the representative works of the medical and the surgical schools respectively A large number of disease-syndromes were defined and described with their pathogenesis and symptoms Their treatment was also prescribed in a systematic manner and on rational basis The dominance of rationality over magical approach of the Atharvavedic tradition is quite obvious in this age There was a good deal of contact between Indian and Greek physicians at various levels and as such it is no wonder that the Hippocratic corpus of medicine closely resembles the *Carakasamhitā* The scientific basis of the drug action was also inquired into and during the process the concepts of *rasa, guna, vīrya* and *prabhāva* were evolved Drugs and dietetic substances were studied in details and were classified according to their properties and action

Caraka observed the influence of genetic and other factors on the foetus which were responsible for its formation and overall development He discovered the Law of the Uniformity of Nature (*Lokapurusa-sāmānya)* by which the laws governing the

physical world were applied to the biological field On the other hand, it was realised that the biological phenomena cannot be universally explained by mechanical means as each individual varies in his basic constitution (*prakrti*) which must be kept in mind while prescribing diet or drug to the patient

As Caraka excelled in medicine, Suśruta has the credit of making many breakthroughs in the field of surgery and is rightly called as the Father of Surgery Description of surgical instruments, operations, varieties of bandages, fractures and dislocations, parasurgical measures like cauterization etc are some of his contributions He innovated the technique of plastic surgery which is described in the context of rhinoplasty Suśruta, being a surgeon, was also a pioneer in the field of anatomy who described first the importance and method of the dissection of dead bodies in the study of the subject

Buddhist and Jaina sources throw ample light on the role of medicine in medical relief of the people Medical service was one of the important programmes of the Buddhist missionaries and we find a vivid picture of these services alongwith drugs and appliances in the Buddhist works like *Mahāvagga* and *Cullavagga* In Buddhist tradition Jīvaka stands as an ideal physician The four noble truths of Buddhism are based on the four basic tenets of medicine Lord Buddha himself is famous as 'mahābhisak' (the Great Physician) who renounced his royal palace, family and comforts in search of the remedy for diseases, senility and death

During the Mauryan period ,the Great Aśoka (3rd century B C) championed the cause of the medical services and established a chain of hospitals and dispensaries all over the country We find a glimpse of the hospital management in the ancient samhitās of Caraka and Suśruta who have described it with requisite appliances and the code of discipline to be observed

It received further impetus during Gupta and Post-Gupta periods Fahian, the Chinese traveller, records the existence of a big referral hospital at Pātaliputra where patients from all over the country came for medical help The *Astāngahrdaya* of Vāgbhata is said to be representative handbook of medicine of that age

The Universities of Taksaśīlā, (3rd century B C) and Nālanda (4th century A D) were the renowned centres of learning in medicine which attracted bands of teachers and students from different parts of the world Probably there was also a medical (including surgical) school at Varanasi under the patronage of Divodāsa Dhanvantari, the king of Kāśī By that time a good deal of literature in medicine developed which was presented in the libraries of these centres of learning Later on due to invasions and other factors most of the literature was lost The remaining texts, however, were preserved in the form of manuscripts in the families of traditional physicians In modern period, due to efforts of some devoted scholars, a good number of these manuscripts have been edited and published

During the reign of Calips, particularly Harun-al-Rashid (7-8th cent A D), the Indian physicians were invited to work in the hospital at Bagdad A number of Ayurvedic scholars also went there to participate in the academic activities under which a number of important Ayurvedic treatises were translated into Arabic which formed the nucleus of the Arabic medicine and thereby of the European medicine It is a significant fact that though in astronomy the Indian authors recognised the impact of Greek knowledge there is no such indication with regard to medicine. It testifies that the level of the medical knowledge in India was quite far ahead of the other countries of the world. The process of interaction continued further in medieval period up to the present age which resulted in growth of knowledge in all aspects Thus interacting with cross-section of ideas and practices, medicine in India attained a high level of efficiency both in theory and practice

It is surprising how the ancient scholars collected such a huge amount of data on the basis of which they defined different disease-entities with their symptoms alongwith the drug formulations applicable to these conditions It is also beyond our imagination to speculate as to what sort of laboratories they had at their disposal This becomes more intriguing in face of the fact that the majority of the above findings have been confirmed by researches on modern scientific lines For instance, *guggulu* [Commiphora *mukul* (Hook ex Stocks) Engle] has been mentioned as the best drug for obesity and *vātika* disorders by Vāgbhata and used in treatment of these disorders by Ayurvedic physicians for the last thousands of years This has been tested in modern scientific laboratories and found to be the drug of choice for hyperlipidaemia

The holistic approach of Indian Medicine is a significant contribution It views person (*purusa*) as a whole and not as analysed in different parts of organs This holistic approach is currently being revived by practitioners of modern medicine Diseases are manifestations of humoral imbalance which have to be tackled comprehensively on the psycho-somatic basis Health, accordingly, is the equilibrium maintained on physical, mental and spiritual levels Thus the tri-dimensional definition of health as propounded by Suśruta is the ideal one which has been reflected in the definition adopted by W H O in modern times

It is interesting to note that when almost all the old systems of medicine in the world perished, Ayurveda, the ancient Indian medicine, is still a living system participating actively in the national medical programmes of the country and having a network of academic and research institutions This unique vitality is the outcome of glorious tradition and the soundness of the basic concepts

There was a need of book which could trace the development of medicine in India in true scientific spirit utilising the available resources in a systematic manner The present volume dealing with the *History of Medicine in Ancient India* has been designed to fulfil this need It is the first of its kind in which a number of experts have contributed on specialised topics They all deserve our thanks Special thanks are due to Prof P V Sharma, an eminent scholar in the field, for having edited the monograph with great care

I hope, the monograph will be useful for a wide range of scholars and researchers at a time when there is a growing appreciation of the role of indigenous systems of medicine for appropriate health care delivery.

P. N. Tandon

New Delhi
October 3, 1991

(P N. Tandon)
President, INSA
and
Chairman, Indian National Commission
for History of Science

इतिहासप्रदीपेन मोहावरणघातिना।
लोकगर्भगृहं कृत्स्नं यथावत् सम्प्रकाशितम् ॥
—महाभारत, आदिपर्व, 1.27

"The entire core of the universe is enlightened, in its true form, by the lamp of history, the destroyer of the veil of ignorance"

— *Mahābhārata, ādiparva, 1.27*

INTRODUCTION

"The function of the historian is neither to love the past nor to emancipate himself from the past, but to master and understand it as the key to the understanding of the present"

— *E H. Carr*[1]

The history of history goes back to eternity. Itihāsa jointly with Purāna is regarded as the fifth veda[2]. It is manifested simultaneously from all the four mouths of the Creator and as such is concerned with all the knowledge revealed beforehand and contained in scriptures. Some persons specialised in the knowledge of history; Caraka, in the context of hospital, mentions expertise in Itihāsa and Purāṇa as one of the qualifications of the courtiers.[3] All this shows the popularity of Itihāsa in early times

History of Medicine in India in ancient period is actually the history of the science of life (Āyurveda) developed by the ancient seers and later systematised as one of the Upavedas. It is attached to Rgveda[4] because of its antiquity and to Atharvaveda[5] due to its secular character Life is beginningless and so is the knowledge about it [6] It is said that Āyurveda was extant in the form of folk-lore long before it was documented and thus was running concurrently with the vedas which represented the culture-lore, that is why Kaśyapa mentioned it as the fifth veda on which other Vedas depend [7] Perhaps to denote the eternity and the earliest existence Āyurveda is said to be manifested before creation [8] The gist of all these statements is that Āyurveda is eternal and as such to trace the history of such a science is to grope in the darkness of hoary past

For the sake of convenience, the present study has been divided into the following periods

1 Pre-vedic
2 Vedic
3 Post-vedic

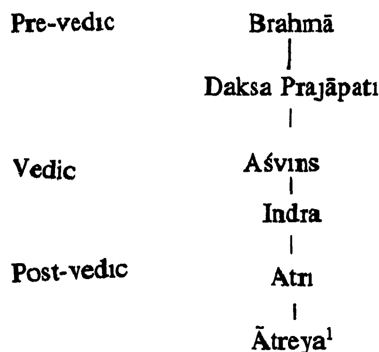
Pre-vedic period covers the history from antiquity to the times before the emergence of the vedas This includes prehistory and protohistory including Indus valley civilization. Vedic period contains the status of medicine as evinced from the vedic literature in its various ramifications-samhitās, brāhmanas, upanisads and

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1 E H Carr What is History, Penguine Books, 1967, p 26
2 Ch Up 7 1 2
3 CS SU 15 7
4 Prasthānabheda, p 1
5 CS SU 30 21, SS SU 1 6
6 CS SU 30 27
7 KS Vi 1 10
8 SS SU 1 6

kalpasūtras Post-vedic is the period when Āyurveda emerged in its crystallized form as a result of discussions and serious thinking in the preceding age.

If evolution of Āyurveda is analysed as described in the Āyurvedic texts, it can be divided distinctly into the above three phases as follows:—



Thus coincidentally our division exactly corresponds to the ancient tradition.

There is divergence of opinions about the extent of the ancient period Some take it till 12th cent. A.D while there are others who accept it till 10th cent A.D These views are presumably based on political considerations but, in my opinion, the demarcation of periods in the history of science should be based on some outstanding scientific idea or fact, rather than a political figure or happening, which may serve as definite landmark. In the present case, the study has been limited to the period ūpto 1000 A D because of a significant happening observed in the 11th cent A D e g emergence of Rasaśāstra which may be taken as a definite demarcating line between ancient and medieval periods. Though alchemical texts might be earlier, Cakradatta (11th cent A.D) is the first text which prescribed the use of mercurial preparations in treatment of diseases Vrndamādhava (10th cent A D.) the just preceding one, does not contain any such formulation[2]

Āyurveda has been a part and parcel of the culture of India and as such is mixed up in the entire Indian documents Even the literature which is commonly brushed aside as non-medical one contains valuable informations about theory and practice of medicine Therefore, if one proceeds to study the history of medicine he should not be content by going through only the medical texts but should also study the non-medical literature critically and sift the medical material therefrom Theories and practices of medicine referred to in such literature not only indicate their prevalence and popular impact but also confirm the same described in medical texts. Some years back, when I placed

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1 CS SU 1 4-5, Ci 1 4 3

2 B N Seal (p 65) traced mercurial preparation in the same and cited instances of *Rasāmṛta cūrna* and *Tāmraparpatī* but in the Anandāśrama edition they are not found

requisitions for some non-medical books including drama and poetry, the scholarly Librarian asked me what was the relevance of the Abhijñānaśakuntalam in Āyurveda. I informed him how one would be able to know the application of Ingudī oil on wounds for healing (4.14) and the use of aparājitā in children (7.p.551). The three kinds of food according to triguṇa are not found in Āyurvedic texts but are described in the Bhagavadgītā The post-mortem examination of the body is found only in Kautilya's Arhtaśāstra and so the preservation of dead body in oil-tub in the Rāmāyaṇa One can find Aśvins' miracles in vedas, Kāśyapa's role in treatment of poisoning in the Mahābhārata, Dhanvantari in Purānas and Jīvaka's spectacular achievements in Mahāvagga From the chapter on medicaments in Mahāvagga, one also acquires knowledge about the pharmaceutical preparations, bandaging etc as practised in Buddhist tradition[1] Valuable information about the position of ancient texts is also obtained from study of such texts From Vāyupurāna, it is revealed that then the Caraka-saṃhitā had only thirteen chapters[2] in the Cikitsāsthāna which means that the redaction by Drdhabala did not take place by then. Similarly, I-tsing's remarks on the completion of the eight parts of Āyurveda gives a reliable basis for fixing the date of the Aṣṭāngahṛdaya The position of medicine and the status of physicians in the society and nation is also known from these sources In view of this, a survey has been made, to a considerable extent, of Epics and Purānas, Buddhist and Jain traditions, other non-medical sources including travellers' accounts in the beginning of the section on the Post-vedic age.

It has been customary to restrict history to persons, gods or men, ignoring the development of ideas relating to theory and practice in different branches of medicine. But the real function of the historian is to trace the ideas which inspired and impelled the individuals and to present them from origin to the present state passing through various phases of development Persons come and go like actors on the stage but the ideas remain eternally and universally in time and space though undergoing modifications according to need. More emphasis has been laid, in this study, on tracing the development of ideas right from prehistoric times to post-vedic age

Accordingly the contents have been classified not only on the basis of medical treatises and authors but also on that of the different aspects of medicine so that one can visualise the factors influencing the origin and development of various branches The orthodox method of writing history on important personages, sages or scholars,[3] or on political kingdoms[4] which patronised and supported the academic pursuits and expansion of medical services has, no doubt, some role but does not manifest the spirit working behind and within Man does not stand in a vacuum, rather he is subjected to a number of forces operating in the universe guided by Time-spirit Until unless the entire situation is investigated critically and deeply it would be fruitless to comment on or accredit the human figures who are mere tools is the hands of the Universal Energy It

1 P V Tewari informed me that the Haramekhalātantra, a text on tantric erotics, is the first work to have described contraceptive methods (IV 296-299)

2 *Nāvanītaka*, a text in Bower mss, also quotes formulations from the Caraka-samhitā within the thirteen chapters

3. Mukhopadhyay G N *History of Indian Medicine*

4. Atrideva: Āyurveda Kā Brhat Itihāsa

was the necessity of the times and circumstances which impelled sages to consider over the medical problems seriously and approach Indra to acquire the Āyurveda Similarly the king Aśoka, as a protagonist of Buddhism, expanded the work of medical relief which was one of the important programmes of the Buddhist order Such occurences can be explained rightly if the contemporary situation is analysed and the basic ideas revealed.

I have tried to develop a new track by combining all possible avenues which may lead to truth. Thus the subject-matter has been divided, apart from medical treatises and their authors, into different divisions and specialities. Here too, two groups are made-one of the conventional eight divisions and the other of non-conventional divisions which are formulated in course of time and are in practice today Āyurveda was divided nto eight parts in beginning of the post-vedic period nearabout 1000 B C., but during the course of nearly 2000 years new branches developed making the initial number of parts just double It would be profiting to study the present in the light of the past which would shed light on the seed and its gradual development and may illumine even the future course The real historian, while standing on the rock of the present, should command both past and future tracing the ever-flowing stream of the human knowledge

As mentioned earlier, history does not consider man as an isolated figure but a product of the circumstances and universal forces operating on him Thus it would be futile to study the history of medicine in India in isolated way irrespective of the world forces around it Man is a social product and as such his ideas shape others and are shaped by others by process of interaction Since earliest times, India never stayed aloof rather she was in close contact with other countries by land and sea routes. Thus, during this process she contributed a lot to the medical knowledge of other countries and was also herself benefitted with new ideas and practices. To assimilate and grow is the sign of a living culture and the culture of India possessed this character from the very beginning But one thing is very clear that medicine in ancient India was far ahead to that in other countries Āyurveda was systematised on sound theoritical foundation quite early in pre-Buddhist age when Hippocrates, the Father of modern medicine, was not even born The Greek thinkers were basically influenced in their outlook and details by Indian thought It is to be noted that medicine in ancient India was more highly developed in comparison to Astronomy and that is why India contributed in the former while in the latter she had to subscribe even from mlecchas[1], but this also vindicates her broader outlook and power of assimilating new ideas for further growth

In a chapter, philosophy of medicine has been dealt with highlighting its secular character and the way in which it has utilised the contemporary philosophical ideas without attachment to any of them and thus formulating its own philosophy which guided the later traditional systems of philosophy to grow and develop The edifice of science stands on the foundation of philosophy and as such to understand the origin and development of any branch of science it is imperative to study its basic philosophy

1 Bṛhat Saṃhitā 2 14 (Mlecchā hi yavanās tesu samyak śāstram idam sthitam Rsivat te'pi pūjyante)

which gave it the characteristic spirit and form, In this field, Caraka has outstanding contributions to his credit. Even on the first and superficial glance, the philosophical tone in the Caraka-samhitā would be evident whereas in the saṃhitā of Suśruta, the scietific style predominates. A new light has been shed by the present study on the philosophy and sect of Carakas who were wandering mendicants offering medical services to the people and had organised order like that of nirgranthas and ājīvikas of the pre-Buddhist age with whom they are often mentioned. Whether this was merely a modification of the old Caraka school of Yajurveda or an independent growth and what was their mode of living and basic philosophy is a matter of further research. By this, the riddle about the redaction of the Agniveśatantra which was completely transformed into the Caraka-saṃhitā could also be solved

This work is an outcome of a collaborative effort According to the plan approved, a list of collaborators, experts in different fields, was drawn up and a formal request was made to them to contribute their papers on the topics allotted. Some responded materially in time while others did very late but there were many who, in spite of accepting the offer, did not submit their papers at all This put me in a very awkward situation as the work could not be presented in a haphazard way by merely assembling certain papers together with big lacunae here and there. After passing through a difficult and vigorously effortful period, I had to fill up these gaps myself so as to give a harmonious shape to the presentation I express my thanks to all the contributors who are eminent experts in their fields and also to those who did not respond materially and thus offered me an opportunity to move through the vast arena of Indian wisdom and culture and thereby benefitting immensely Prof R P. Bhatnagar and Dr R.C Choudhury expired in the mean time and are no longer to see this volume published I am very sad for their untimely demise The task involving difficulty of such a magnitude could not have been overcome if the Indian National Science Academy would not have come forward with all possible help for which I am extremely thankful to them. Particularly I express my gratitude and thanks to Dr. A K Bag, Head, History of Science Division and Sri R N Ghosh of Indian National Science Academy for their inspiring and encouraging supports during the moments of vicissitudes I am also thankful to the Authorities of the Banaras Hindu University particularly the Deptt of Medicinal Chemistry for providing me facilities for research work.

In such a collaborative work, it is quite natural to face varieties and diversities of ideas and facts In such cases, I have made minor adjustments in the text itself where there was no wider gap while in others where such adjustment was not possible I have given my remark in the footnote so that the reader may have the comprehensive idea about the subject Thus effort has been made to present the work as a composite whole rather than a bunch of several papers Specialised bibliography is given in the end of certain papers, but for convenience, a select bibliography of primary and secondary sources has been appended topic-wise at the end

Sri Aurobindo has rightly expressed that true happiness in this world is the right terrestrial aim of man and true happiness lies in the finding and maintenance of a natural

harmony of spirit, mind and body[1] This exactly is the object of Indian Medicine. According to Caraka, spirit, mind and body make a tripod on the harmony of which the universe stands[2]. The holistic approach to man is the message of Āyurveda, the medicine of India, to the modern world which is troubled now with divisions and diversities and is inclined to multichotomy rather than to synthesis

As Mahābhārata says, I have tried, along with all the collaborators, to enlighten the hidden corners of ancient Indian Medicine with the searchlight of history and now it is upto the learned readers to judge how far we have succeeded in the endeavour

P.V. Sharma

1 Aurobindo The Foundations of Indian Culture, p. 2

2 CS. SU 1 46 (Sattvam ātmā śarirañca trayametat tridandavat. Lokas tiṣthati samyogāt)

CONTENTS

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LIST OF ILLUSTRATIONS

LIST OF ABBREVIATIONS

AD	Arunadatta
AH	Aṣṭāngahṛdaya
Ait Br	Aitareya Brāhmaṇa
Ait. Up.	Aitareya upaniṣad
AN	Aṣṭānganighaṇṭu
Ap. Dh.	Āpastamba Dharmasūtra
Ap. Gr	Āpastamba Gṛhyasūtra
Ap. Sr	Āpastamba Śrautasūtra
Arth.	Kauṭilya's Arthaśāstra
AS	Aṣṭāṅgasaṅgraha
As Gr	Āśvalāyana Gṛhyasūtra
Ath Anu.	Atharvānukramaṇikā
AV	Atharvaveda
AVI	Āyurveda kā Vaijñanika Itihāsa (by P V. Sharma)
AVP	Atharvaveda Paippalāda Śākhā
AVS	Atharvaveda Śaunakīya
Baudh. Dh.	Baudhayāna Dharmasūtra
Baudh. Sr	Baudhāyana Śrautasūtra
BC	Buddhacarita
BH	Bhattāra Haricandra
Bhag.	Śrīmadbhāgavata purāna
B.H U	Banaras Hindu University
BO	Bower Manuscript
Br Up	Bṛhadāranyaka upaniṣad
Bṛhajjā Up	Bṛhajjābāla upanisad
BS	Bhela-samhitā
BVP	Brahmavaivarta purāṇa
Catu.	Caturbhāṇī
Ch Up	Chāndogya upanisad
CD	Cakradatta
Ci	Cikitsasthāna
CK	Cikitsākalikā
CP, Cakra	Cakrapānidatta
CS	Caraka-samhitā
CV	Cullavagga
DC	D C Bhattacharya
DK	Digha Nikāya
DL	Dalhana
DP	Dhammapada
Garbha Up	Garbhopanisad
Gaut. Dh.	Gautama Dharmasūtra
Go Br	Gopatha Brāhmana
Go Gr	Gobhila Gṛhyasūtra
GP	G P Majumdar

Gr	Gṛhyasūtra
H	Harsacarītam
HA	Hymns of the Atharvaveda (by M. Bloomfield)
HCIP, H.C.I.P.	History and Culture of the Indian People, Bharatiya Vidya Bhavan, Bombay
Hi. Gr.	Hiraṇyakeśi Grhyasūtra
HIL	History of Indian Literature (by M Winternitz)
HIP	History of Indian Philosophy (by S.N Dasgupta)
Hi. Sr.	Hiranyakeśi Śrautasūtra
HS	Hārīta-samhitā
I.J.H.S.	Indian Journal of History of Science
Jaim Gr.	Jaiminiya Grhyasūtra
Jati	Jātisūtrīya adhyāya
JB	Jaiminīya Brāhmaṇa
J.B.O.R.S.	Journal of Bihar and Orissa Research Society
JJ	Jejjata
K.	Kādambarī
Ka.	Kalpasthāna
Kam.	Vātsyāyana's Kāmasūtra
Kan. Sam	Kāṇva Samhitā
Kat. Sr	Kātyayāna Śrautasūtra
Kath. Gr	Kāthaka Grhyasutra
Kath. Sam	Kāthaka samhitā
Kath. Up.	Kathopanisad
Kaus Up.	Kauṣītakī upanisad
Kha Gr	Khādira Gṛhyasūtra
Khi	Khilasthāna
K.K	Kalyānakāraka
KS	Kaśyapa-samhitā
KSS	Kauśika-sūtra
Madh Sam.	Mādhyandina samhitā
Mait Sam	Maitrāyaṇī samhitā
Mand Up	Māndūkya upanisad
Mar	Mārkandeya Purāna
MB	Mahābhāṣya (of Patañjali)
MBH	Mahābhārata
MK	Macdonell and Keith
MN	Mādhavanidāna
MP	Milindapanha
M R I	Mithila Research Institute, Darbhanga
MV	Mahāvagga
MVB	Madhya Vāgbhata
Nārā Up	Nārāyanopanisad
Nav	Nāvanītaka
Ni	Nidānasthāna
NK	Niścala Kara

Pa. Gr.	Pāraskara Gṛhyasūtra
Para Sm	Pārāśara Smṛti
Pra. Yaug.	Pratıjñā-Yaugandharāyana
Pras Up	Praśnopanısad
PVS	P.V Sharma
Raghu	Raghuvaṃsa
Ram	Rāmāyana
RRS	Rasaratnasamuccaya
RV	Rgveda
Sa.	Śārīrasthāna
Sad. Br	Saḍvıṃsa Brāhmana
Sam Br.	Sāmavıdhāna Brāhmaṇa
Sank Ar	Śānkhāyana Āranyaka
Sank Br	Śānkhāya Brāhmana
Sank Gr	Śānkhāyana Grhyasūtra
SB	Śatapatha Brāhmana
SBV	Saraswatı Bhavan, Varanası
SD	Śrīkanthadatta
SN	Saundarananda
SS	Suśruta-saṃhıtā
SU.	Sūtrasthāna
SV.	Sāmaveda
SV. Up	Śvetāsúvatara Upanısad
Tait. Ar.	Taıttırīya Āraṇyaka
Tait. Br	Taıttırīya Brāhmana
Tait. Sam.	Taıttırīya-samhıtā
Tand Br	Tāṇdya Brāhmana
TP	Tarapada Chowdhury
U	Uttaratantra
Vaıkh Sma.	Vaikhānasa Smārta Sūtra
Vaȷ Sam	Vājasaneyı Samhitā
Vas. Dh.	Vāsısta Dharmasūtra
VB	Vāgbhaṭa
Ved Ind	Vedıc Index (by Macdonell and Keıth)
Ved Pl ,	Vedıc plants (by G P Maȷumdar)
Vıs Dh	Vısnu Dharmasūtra
Vıs Sm	Vısnu-Smrtı
VM	Vrndamādhava
VR	Vıȷayaraksita
VS	Vaṅgasena
Yaȷ Sm.	Yājñavalkya-smrtı
Y V	Yajurveda

SECTION 1

Pre-Vedic

1
PRE-VEDIC MEDICINE

P.V. SHARMA

Preservation of health has been instinctive necessity of mankind from the very beginning of creation. That is why Caraka has said 'Āyurveda' (the science of life) as beginningless and eternal[1] Suśruta, going a step further, says that the creator has delivered it even before creation[2] (evidently with the idea that the creatures would need it urgently) There was never any break in continuity of this tradition which has come down to us in the present times. The word '*Śāśvata*' denotes this idea. There may be some change in form and content from age to age but the central motive and intinct is the same Modern scholars have termed it as conservatism[3] whereas in reality it is faithful traditionalism of Indian civilization.

According to one view, first traces of man in India were recorded as relating to the second interglacial period, more than 100,000 years before Christ. It was the palaeolithic age when pebble tools were used[4] but the conditions for existence were not favourable either for mammals or man in this age. The climate was not only colder and stormier but the rainfall also was heavier than today So it would seem that man had actually inhabited the area almost at the end of the first interglacial stage. Implements used at that time were made of quartzite [5]

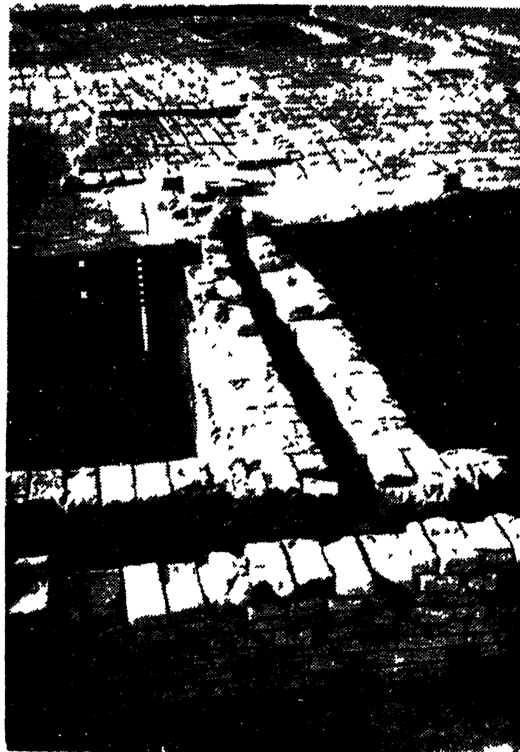
Gradually by advent of time, mesolithic age came when the implements used were made primarily of stone, though bone was also used These tools were small called as microliths Such microliths have been found in several places in India[6]. In neolithic age, stone tools were used but with polish either all over their body or at their ends [7]

In palaeolithic age, man was hunter and used to collect his food and other requirements from the surrounding nature He covered his body with skin of animals or bark or leaves of plant and thus protected himself from the fury of the weather In course of time, in the neolithic age (about 10,000-6000 B.C), man learnt cultivation and began to grow food crops He also tamed animals and acquired ability in making pots and weaving garments This culture continued for long which resulted in composition of villages based on agriculture The earliest remains of such villages are found in Baluchistan and Sind[8]

Excavations at Harappa and Mohenjo-daro discovered a prehistoric city culture known as Indus Valley civilization It has been dated back to 3000-1500 B C.[8a] The city of Mohenjo-daro extended over a large area and indicates the existence of an organized system of government It was well planned and divided into several blocks by intersecting streets which varied from 9 feet to 34 feet in width. Inside the blocks, there were narrow lanes crowded with houses Each lane had a public well The houses were

quite spacious, containing wells and bath-rooms and provided with covered drains connected with street drains leading to soak-pits Every house had a separate bath-room, placed at the street side and paved with burnt bricks, which sloped to a corner containing the drain carrying off waste water Vertical drain pies indicate that baths were constructed on the upper storeys also The elaborate and planned drainage system is a unique feature of the Indus Valley civilization which shows special care for sanitation and health

There is also the Great Bath. The actual bathing pool measuring 39 feet × 23 feet with a depth of 8 feet is situated in the middle of a quadrangle having verandahs and small rooms on all sides Near the south-west corner of the Great Bath is a hot air bath having a number of rectangular brick platforms about 5 feet high with a series of vertical chases sunk in their sides Another bath room establishment consisted of two rows of bath rooms separated by a narrow passage That the sanitation was properly looked after is also evident from the rubbish heap consisting of broken pottery, ashes etc. found in deep trenches outside the city Trees and plants were also grown in the enclosures The careful town-planning, adequate water supply and efficient drainage system testify to an advanced state of civic authority fully conscious of its responsibility for protecting the health of the inhabitants [9]



Bath Platform with Drain, Lothal
(Courtesy Archaeological Survey of India)

Cultivation of food crops was practised on an extensive scale Besides wheat and barley, rice, peas and sesamum alongwith vegetables and fruits were items in the dietary [10] Cotton was also an important crop grown for internal use as well as for export particularly to Mesopotamia [11] Among animals, remains of humped bull, buffalo, sheep, elephant, pig and camel have been recoverd Horse, cow, lion, rhinceros, tiger, monkey, dog, bear, hare, donkey, squirrel, mongoose, parrot, and peacock were also known to the people.[12] Standard system of weights and measures was also in practice [13]

The people of Mohenjo-daro had close contacts not only with the other parts of the country but also with the west and central Asia They had trade contacts with Sumer, Egypt and Crete [14] There are evidences for the presence of Indian merchants in the great cities of Elam and Sumer in early dynastic times Clear signs of contact with Sumer first appear in Akkadian times e g about 2300 B C.[15]

The Indus Valley people obtained conch-shell from Saurastra and the Deccan Silver, turquoise and Lapis lazuli were imported from Persia and Afghanistan Copper came either from Rajasthan or Persia while Jaduite was probably obtained from Tibet or Central Asia.[16] Gold, silver, copper, tin, lead and bronze were known in the Indus civilization Copper and bronze probably replaced stone as the material for household implements [17] The products of the Indus reached Mesopotamia either by sea or land as a number of typical Indus seals and other objects from the Indus valley have been recovered in Sumer at levels dating between about 2300-2000 B C The finding of these seals suggest that merchants from India actually resided in Mesopotamia.[18]

As said above, medicine, being inevitable tool for maintaining creatures, emerged parallel to creation or even beforehand Caraka says, "there is no substance which can't be used as drug" [19] When these two statements are integrated, it is natural to presume that man applied hygienic measures to protect himself from diseases and used drugs in case of ailments right from prehistoric age Even when he was in the hunting stage under palaeolithic and neolithic ages, he was well acquainted with his surroundings He



Mohenjo-daro The Great Bath
(Courtesy Archaeological Survey of India)

identified and knew the plants which he used as garments and food, stones and other minerals which he used as implements and also animals which he saw around and hunted. It is logical to presume that the prehistoric man derived his medicinal substance from all these three sources — vegetable, animal and mineral. This continued ever in later ages when these three are taken as sources of drugs [20]

In the Indus civilization, there are evidences of tree-worship[21] which indicates great importance of plants in human life On this basis, it may be presumed that plant drugs were more commonly used than animal products and minerals as is seen even in later Ayurvedic samhitās. Among the inorganic substances, remains of *śilājatu* have been found which indicate that it might be a drug of choice of the Indus people. Even today śilājatu is used as strength-promoting drug and also efficacious remedy for a number of diseases. It has been described in almost all the texts starting from the earliest to the latest ones Among the animal products, stag-horn and cuttle-fish bones have been found They were also probably used as drugs[22] since these are popular medicines even in the present times *Śrngabhasma* is a good and common remedy for cardiac pain and respiratory disorders and *Samudraphena* is mostly used in diseases of ear Presumably conch-shell was also used as drug after its preliminary processing Some scholars admit that the medical knowledge of the Indus people could have been in a sufficiently advanced stage but they credit it to their relation with Mesopotamia which had developed medical tradition from an early age[23] but it could be reverse also That surgical measures were also practised is inferred from the findings of trephined human skulls and curved knives in excavation [24]

Great emphasis has been laid on personal hygien from earliest times which is described in ancient texts in form of *dinacaryā* (daily life) and *rtucaryā* (life in different seasons) Elaborate and planned sanitary arrangements in Indus sites indicate the inclination and emphasis of the people on cleanliness Bath provided in every house also indicates the importance of cleanliness in the daily life of the inhabitants [25]



Paśupati Rudra, The First Physician with Goddess
Mohenjo-daro
(Courtesy Archaeological Survey of India)

Much importance has been given to bath in traditional preventive medicine. Water is also attributed with miraculous properties not only because of its use for outward cleanliness but also as a vehicle for maintaining physiological body-fluid. That is why water is regarded as related to *Prāna*[26] (vital air) Hence it is not just to label the Great Bath as only some religious place and other baths as ordinary things having no scientific basis of hygiene [27] Filiozat refers to various methods of sudation prescribed in illness but has missed the importance of *śnana* (bath) in personal hygiene so much emphasised in aneient texts [28] There is also evidence to show that anointment *(abhyaṅga)* was also popular [29]

Some cosmetics were also used by the Indus people, including collyrium for which metal rods (*śalākās*) of copper and bronze were used [30] This practice too has come down through ages and is recorded in later classical texts. Use of collyrium prevents eye diseases

The Indus people wore on their body seals depicting animals as amulets to ward off evil spirits [31] Belief in invisible pathological agents comprising mostly of evil spirits (*bhūtas*) is thus continuing since early times. Later on it was recognised as a branch (*aṅga*) of Ayurveda Even in medicine (*kāyacikitsā*), the first group of therapeutic measures is concerned with gods and demons (*daivavyapāśraya*) [32]

Evidences are also there to show that worship of Lord *Śiva* and mother *Goddess* was prevalent in Indus civilization[33] It may be noted that Lord *Śiva* is mentioned as the first physician among *gods* [34] It means that he precedes *Aśvins*, the twin *god-physicians* of the Vedic times Thus Lord *Śiva* may be taken as the symbol of physician in pre-historic time Incidentally it may be mentioned here that mythical origin of *Jvara* (fever), the foremost among diseases, relates to Lord *Śiva*[35] and in its therapy too Lord *Śiva* along with Mother Goddess is propitiated when drug therapy fails [36]

Thus the seeds of medicine were sown in pre-historic times which can be traced even today linked with medicine in modern India

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Origin of other major diseases too is centred round Lord *Śiva*

SECTION II

Vedic

2

VEDIC MEDICINE

P.V. SHARMA

That Āyurveda is intimately connected with the Vedas is evident from the fact that the former is regarded as an Upaveda of Rgveda[1] (because of antiquity) or *Upāṅga* of *Atharvaveda*[2] (because of similarly in approach and the subject matter) In later period when the Vedas became target of attacks from many corners, Āyurveda was utilised as a powerful instrument for supporting the authroitativeness of the Vedas[3]

Tracing the advent of Āyurveda, the *Samhitas* of Caraka etc say that Brahmā (the creator) revealed Āyurveda to Daksa Prajāpati who handed it over to Aśvins wherefrom it passed to *Indra*. The worldly sages, Atri, Bharadvāja etc , moved by the affictions of the people due to various physical and mental diseases, approached Indra and brought Āyurveda down to the earth for prevention and cure of ailments[4]. This legend clearly demarcates the vedic Medicine upto Indra from the past-vedic one thereafter beginning from Atri or Bhardvāja. Even in earlier days the vedic medicine used to relieve the common man through benefactor like *Aśvins* who had to face great struggle to get their proper place among *gods*[5] in which the worldly sages like Cyavana also extended their full support

According to tradition of *Suśrutasamhitā* the knowledge of Āyurveda was handed down from Indra to Dhanvantari[6] According to another tradition, Bhāskara in stead of Indra, learnt Āyurveda from Daksa Prajāpati and taught it to sixteen disciples including Dhavantari[7] This shows the importance of the *sun* god in matters of health and disease

Not only *Aśvins*, *Indra* and *Sun* were custodians of health of man but other gods such as *Rudra, Agni, Varuna, Marut* were also concerned with this Prayers were offered to them for healthy and long life and to cure various ailments

Maruts have been invoked to bring about remedies for the disorders of *Marut* (*Vāta*) They have been praised as the knower of all drugs residing in rivers and mountains and have been prayed to collect them and treat the disorders with them and also to make the limb affected by *Rapas* (pāparoga) complete. They have also been prayed to protect the man and make him happy.[8]

Varuṇa is the Lord of cosmic order who controls the rhythmic movement of Nature and uncessant flow of rivers He has been praised as the knower of hundreds and thousands of drugs, Physician and the master of Physicians and has been prayed to protect the mankind and bring froth happiness on it [9] It may be noted that whoever violates the order suffers from bad consequences like King Hariścandra who became victim of ascites by violating it.[10]



Sūrya (Sun-god) with Aśvins on the sides (Courtesy Bharat Kala Bhavan, BHU).

Agni is shining externally as well as present innately in all the creatures By its intense power it destroys the organisms and other agents which are harmful to the body Agni has been prayed for destroying evil agents and to provide health and happiness Agni is called as *'Bhisak'* (Physician) and maker of drugs (*Bheṣaja-Kartā*). As *Bhiṣak,* he is *Rakṣohā* (preventing diseases by destroying pathogenic agents) as well as *Amivacātana* (alleviator of diseases and thus effecting cure)[11]

Rudra is mentioned as the first godly Physician (*Prathamo Daivyo Bhiṣak*)[12]. In several hymns his connection with medicine is given *Rudra* is said as *'Jalāsabheṣaja'* (endowed with drugs providing health or with water as drug)[13] It is to be noted that he is worshipped since pre-historic age

Sūrya is the source of cosmic energy. He is invoked for healthy and powerful long life He destorys diseases like *hṛdroga* and *hariman* and blesses women with male progeny He is also destroyer of *Krimis* (Pathogenic organisms)[14].

Indra is said as *'Bhisak'*. He protects people by destroying demons and evil agents In one of the hymns He is invoked to destory *Krimis* affecting the child He cured Apālā, Atri's daughter, of the skin disease and sterility and his father of the loss of hairs [15]

Apart from the above, the most popular and expert Physicians were the twin *Aśvins* whose marvellous medical and surgical feats described in the *Rgveda* indicate the position of the healing art in those olden days They were also expert in plastic surgery, transplantation of organs and measures of resuscitation including animal husbandry. *Aśvins* were the living symbols of the ancient traditions of medicine and surgery as was Dhanvantari in the age of *Purānas*

Aśvins are the twin gods of Vedic age and are regarded as Physicians of *gods* Āyurveda was handed down from *Brahmā,* the creator, to them through Dakṣa Prajāpati and thence to *Indra* and therefrom to Bharadvāja/Dhanvantari Thus *Aśvins* were not only custodians of Āyurveda in Vedic period but also acted as central link in the chain of Āyurveda coming down from heaven to earth e g from Vedic to post-Vedic age

Aśvins are called *'Nāsatyas'* (ever truthful or moving) and *'Dasra'* (destroyer or worth looking) which shows their true knowledge and power of destroying undersirable elements including diseases They are called *'Aśvins'* because of having powerful horses or movements and also due to the fact that they are all-pervading on account of swiftness

Aśvins are the direct descendemts of the God Sun as the son of Vivasvat and Saranyu[16] who were incidentally then in the form of horse and mare respectively, hence the name *'Aśvinīkumāra'* (mare's son). They are very handsome and powerful, unaffected by age and ever young They won the horse race and enchanted by their beauty and power Sūryā, the daughter of the Sun, took them as her husband

Aśvins have got a chariot of golden and honey-like colour with three wheels, three spokes, three columns, three ends and three peaks The horses carrying the chariot are brown and splendid They run very fast with unimaginable speed like that of mind and in no time reach the destination and cross even seven streams and also cover five lands The three wheels of the chariot are spread over heaven, sky and earth Aśvins with their wife, Sūryā, sit on the chariot having a pot full of honey and also three containers full of grains The chariot is made of forest wood and three metals (*tridhātu*) By this chariot Aśvins attend the needy persons very swiftly when called for. Ordinarily they travel thrice in day and thrice in night In sacrifices they come thrice and give honey They also give nourishing food thrice a day. They destroy the agents harmful to the human beings. They also fill the rivers with water and plants with juices They produce milk in breasts and sweat and energy from food. They live in company of *gods* such as *Indra, Vāyu, Āditya* and *Viṣnu* and drink Soma juice. They know three kinds of medicine and treat the patients effectively with them They kill demons and eliminate diseases and thus protect the people They learnt *Madhu-Vidyā* and *Pravargyavidyā* from Dadhīcī, son of Atharvan, and thus became expert in the same

There are a number of hymns as prayers offered to Aśvins which show the different functions performed by them

1. May Aśvins give me heavenly, earthly and waterly medicines thrice and make the *Tridhātu* in balanced state for happiness of the people
2. May Aśvins give us long life.
3. May Aśvins give us energy and power and protect us from our enemies far and near particularly in dark night
4. May Aśvins bless with brave sons
5. May Aśvins make our horses strong and speedy
6. May Aśvins make our cows with profuse milk
7. May Aśvins provide us with wealth, food and cows with profuse milk
8. May Aśvins nourish our militia with honey and ghee
9. May Aśvins remove our poverty and illness.
10. May Aśvins give us energy and divine power and make us full of honey
11. May Aśvins make our body devoid of old age
12. May plants and herbs grow for Aśvins' work

13 May Aśvins and Goddess *Saraswatī* maintain power in Indra, senses in sensory organs, consciousness in heart, stregth in *nābhi*, milk in breasts and power in reproductive organs.[17]

Interpreting the symbolic expression *Yāska* remarks thus — Who then are those Aśvins? 'Heaven and earth' say some, 'day and night' say others, 'the Sun and the Moon' say others, 'two king perforers of holy acts' say legendary writers. This time is subsequent to midnight when manifestation of light is in distant future[18] In the myth of *Aśvins* cosmological and personal elements are blended into one Because of too much affiliation with human beings they were not admitted to a sacrifice by *gods*[19] but later on by various acts of miraculous success in treatment those physicians began to be worshipped with other deities and had their proper part in sacrifices.

In fact, Aśvins are the symbol of ideal healer. The twins represent the schools of medicine and surgery as they showed their miracles in both these fields They also represent theory and practice of science Aśvins are called as two wings of a bird They had a clear conception of the uniformity of structures and functions in living beings and as such they tackled the problems of animals as well successfully. They had grand personality and were also sportsmen and warriors. They were very social and kind to others. They helped everybody, rich or poor, in need without any return Aśvins were embodiments of all the qualities of a good healer

The composition of chariot with three *Dhātus* is the symbol of the living body which is composed of three *Dhātus* (*Vāta*, *Pitta* and *Kapha*) They travel thrice a day and thrice in night this shows the corresponding change in status of *Tridhātus* Three containers of grains represents three parts of the stomach and the honey represents *Ojas* which is derived from food at the end of the metabolic process In classical texts, *Ojas* has been compared with *Madhu* The five lands are the five *Bhūtas* which compose the material body and the seven streams crossed by Aśvins are seven *Dhātus* which nourish the field (body) Horse is the symbol of power physical as well as reproductive. On the latter basis, one of the *Aṅgas*, *Vājīkaraṇa*, was developed in later times That Aśvins provide nourishment to body, produce energy and destroy harmful agents is symbol of immunity that is produced by Ojas in the living body In this way, they bless with healthy, happy and long life with no sufferings of old age [20]

Aśvins did miracles in medicine and surgery The *Rgveda* is replete with a number of cases where miraculous cure was effected by them Some of these are given below —

1 They took out the drowned *Rebha* out of water and made him quite fit and free from troubles [21]

2 They released the captive Vandana and made him rejuvenated [22]

3 They took Antaka out of ditch and made him free from troubles [23]

4 They rejuvenated Kaksīvān, a member of the family of Pajra.[24]

5. They rejuvenated the old Kali and blessed him with a good wife [25]

6. They saved the sage Babhra from excessive drinking of *Soma* [26]

7. They made old Cyavana quite young and husband of a number of wives They also blessed him with long life [27]

8. Vadhrimatī was cured of sterility and was blessed with a son named Hiranyahasta who was delivered with ease [28]

9 They gave strength, progeny and longevity to the subjects of Jahnu.[29]

10 King Vaśa was very weak and disabled They made him fit for battle in one day.[30]

11. Old-looking unmarried princess Ghosā, the daughter of Kaksīvān, was cured of leprosy, made young and beautiful and was blessed with a husband [31]

12. Śyāva was cured of leprosy, rejuvenated and was blessed with a good wife [32]

13 King Māna was blessed with a son [33]

14. Dīrghatamā, son of Ucathya and Mamatā was weak and blind He was saved from tortures of *Asuras* and was given long life [34]

15 Somaka, son of Sahadeva, was given longevity [35]

16. They nourish foetus in the living beings and prevent abortion Difficult labour is also made easy by them [36]

17 Delivered Vāmadeva from mother's womb [37]

18 They nursed the sage Śayu [38]

19 The sage Atri was being tortured by Asuras in a gloomy abyss with fire Aśvins treated and saved him and made him young [39]

20 They gave eyes to the blind Kanva [40]

21 The sage Parāvrk was blind and lame His eyes and legs were restored by them [41]

22 They fitted iron legs (artificial limb) to Viśpalā, the daughter of King Khela, and made her fit for the battle very next day [42]

23 They gave eyes to the blind Rjrāśva [43]

24. They gave ears to the deaf son of Nrsad [44]

25 They also cured cow of sterility [45]

Caraka has also enlisted some of the Aśvin's miracles as follows —

1 They united the severed head of sacrifice on his turnk

2. They restored the fallen teeth of Pūsan.

3. They restored the lost eye of Bhaga.

4 They treated the stupefaction of the arms of the wielder of thunderbolt (Indra)

5. They cured Soma of consumption and intoxication

6. The old Cyavana, the descendent of Bhṛgu, who was debilitated due to indulgence in sex was rejuvenated by *Aśvins*

Because of these and similar other feats *Aśvins* were honoured highly by Indra etc. received offerings and prayers from the Twice-born [46]

In the *Suśruta-Samhitā* also, the miracle of uniting the head of sacrifice is given. This was performed by *Aśvins* on the request of *gods* but they did it only after the gods persuaded Indra to allow their participation in sacrifice[47] It again shows that *Aśvins* were not allowed to take part in sacrifices but because of helplessness of *gods* they bargained their claim.

The texts- *Cikitsāsāratantra, Aśvinī* (Kumāra) *Samhitā* and Nādīnidāna are said to have been the works revealed by *Aśvins*

A number of formulations are attributed to *Aśvins* [48]

Diseases

1. Yakṣma:

It affects almost all the parts of the body [49] '*Yaksma*' most probably means 'disease' in general to which any part of the body may become victim[50] In later texts too, it has been used in this sense as a synonym of *Roga*[51] (disease) Some diseases were unknown (*Ajñātayaksma*)[52] as at present There is also '*Rājayaksma*'[53] (king of *Yaksmas*) preceded and followed by a number of diseases as a king in a procession, is preceded and followed by his associates and attendants [54] This *Rājayaksma* is evidently consumption [55]

In its treatment, hymns were recited along with the use of medicinal herbs of which *Kustha,*[56] *Arundhatī,*[57] *Cīpudru,*[58] Varana[59] and *Śatavāra*[60] are important ones The

last two were used as amulet (*Mani*). Lead[61] and Añjana[62] are also prescribed for its treatment The incense of *Guggulu*[63] was also used At present it is used not only as incense but has acquired a wide range of applications in various disorders

2. Kṣetriya:

Ksetriya comes in the AV[64] Sāyana, commenting on its nature, says that it is a genetically inherited disease like consumption, leprosy, epilepsy etc which is transmitted by the patient to his son and grandson [65] Consequently the disease is so obstinate that its treatment continues in generations which only indicates its hereditary nature and incurability But this does not lead us to comprehend any particular syndrome except having idea about its genetic origin

Filliozat thinks it as disease intimately connected with incurable *Kustha.*[66] Karambelkar takes it as the malady caused by grass-piosoning [67] Inspired by this and the word '*Āsuti*' (AV 3 7.6) some believe it to be a disease caused by a prepared mixture, a type of food derived from various cultivated plants and made harmful by sorcery The '*Ksetra*' in '*Ksetriya*' suggests its connection, in etiology as well as remedy, with cultivated soil (and its products)[68] This also does not solve the problem Bhatta Bhāskara interprets it as a disease produced in foetus [69] Most probably, it is the diseaee well known as *Kustha* in post-vedic period but described as *Ksetriya* in vedic literature Its etiological factor was observed to be the improper use of fermented liquors The other possibility for its being is acute ischemic cardiac disorder (with fatal end) characterised by excruciating pain in chest (cardiac region) The disorder is also located in heart (*guspitam yadasya ksetriyam hrdi* AV 3 7 1-2)

The following are the remedies for the *Ksetriya roga* —

1 *Ksetriyanāśini Vīrut* [70]

2 *Apāmārga* [71]

3 Barley-straw and *sesamum*-stalk (or paste) [72]

4 Stag-horn (*mrga-śrnga*) used as amulet and intake [73] *Mrga-srnga* is a traditional remedy employed in cardiac pain even to-day

5 Water Water is regarded as universal remedy for a number of disorders [74]

3. Jāyānya:

Jāyānya is a disease which affects bones, musculature and cervical vertebrae It is of infectious nature and is transmitted from person to person It is of two types-wounded and unwounded [75]

Sāyana takes it wasting or consumption caused by sexual indulgence in women (*Jāyā*) He quotes its mythological origin from *Taittirīya-Samhitā* (2 3 5 2) where it is

named as *'Jāyenya'* interpreting as that which is acquired from women [76] Some, however, take it as a group of skin-ulcers [77] The nature of the disease being acquired from women and transmission from person to person leads towards thinking it as a venereal disease. The presence of wound also point to the same. Thus *Jāyenya* (of TS) and *Jāyānya* will be two different entities, the former as a synonym of *Rājayaksma* and the latter as venereal disease.

Jāyānya is treated with *Añjana,* an inorganic substance obtained particularly from the mountain named *Trikakud* (having three peaks) [78] This has been translated as 'unguent'[79] or 'ointment'[80] which is not correct (*Abhyañjana* is ointment and not *Añjana*).

4. Takman:

Takman is described vividly in AV It is a periodic fever attended with rigor, trembling and pain particularly in head It is accompanied by debility and cough and ends in pallor or yellowness It is endemic in particular places like *Munjavān, Mahāvrsa, Gāndhāra, Anga* and *Magadha* It attacked mostly in summer *(Graisma),* rainy season (*Vārsika*) and autumn (*Sārada*) Its types such as *Anyedyuh* (quotidian), *Trtīyaka* (tertian) and *Sadandi* (remmittent) etc are mentiond. In severe types, often the patient suffers from delirium and dies [81] Perhaps the rate of mortality was high

It is a clear picture of malaria Sāyana calls it *'Śītajvara'*[82], *'Śītajanaka'*[83] (chilly fever) and *'Krcchra-jīvanakārin'*[84] (making life troubled) Whitney translates it as 'fever'.[85] It originates from (derangement of) Agni[86] which is also accepted in classical Āyurveda

Gruel made of parched paddy is given to drink while reciting the hymn *'agnistakmānam'* [87] Prayers were offered to gods mainly Rudra [88] Among the drugs, *Jangida,*[89] *Añjana*[90] and *Kustha*[91] were used *Kustha* is particularly called as *'Takmanāśana'* There is also a *Takmanāśana Gana* [92]

The word *'Takman'* is not found in the *Rgveda* nor is it observed in the post-vedic literature

5. Balāsa:

Balāsa is a family member of *Takman*[93] Sāyana takes it as diseases caused by *Kapha* such as *Kāsa* (cough), *Śvāsa* (dyspnoea) etc in which debility is a general feature [94] Thus he interprets the word *'Balāsa'* in which Bala (strength) is thrown away On this basis, it may be the syndrome which is called as Pratiloma *'Ksaya'* in later literature and where *'Balāsa'* is reduced as a synonym of *Kapha* It may be noted that one of the modes of the origin of *Ksaya* is by aggravation of *Kapha* and consequent obstruction in channels [95] It is described as closely related to *Takman* because debility and loss of *Dhātus* is always associated with malarial fever Some take it as oedema[96]

but it is not a common feature of fever, it can ensue only in very chronic cases In case of debility, enlargement of lymphatic glands is very common

Añjana[97] and *Cīpudru*[98] are the two main remedies for the disease Wearing of *Jaṅgida-maṇi*[99] is also prescribed for the same There is a group of drugs termed as '*Balāsa-nāśinī*'.[100]

6. Rapas:

Sāyana has generally taken it in sense of '*Pāpa*' (sin) being cause of disease [101] He has also interpreted it as 'disease resulted by sin'[102] '*Pāparoga*' is generally used for consumption (*Pāpayakṣma*) in vedic literature and more particularly for *Kuṣṭha* (leprosy) later on In the other context of RV Sāyaṇa does not take '*Rapas*' as disease but in the sense of sound [103] Zysk has, in a far-fetched way, suggested its identification with dracunculiasis or guinea-worm disease [103a] The very fact goes against it that this disease is not found in post-vedic literature before 9th cent A D It seems to be a condition of general sickness caused by antitoxins or utmost it can be taken as arthritic syndrome

Barley and *Kustha* are prescribed for its treatment alongwith wâter and air [104]

7. Hariman, Harita:

Hariman is interpreted by Sāyana as pallor and yellowishness of the body caused by jaundice etc [105] *Hariman* and *Harita* look like synonyms but after careful examination the former appears to be jaundice while the latter as pallor 'Hr' in 'Harita' denotes 'loss' of blood (anaemia) *Takman* is the main cause of *Harita* [106]

In my view, initially it is Harita *denoting* pallor of skin (*Pāndu*) (anaemia) developing further into *Hariman* (*Kāmalā*-jaundice) In post-vedic texts, the same position about *Pāndu* and Kāmalā is observed It is interesting to note that they have retained the vedic term 'Hariman' in slightly modified form as 'Halīmaka' and describing it as type of 'Kāmalā'

Probably the three birds[107] represent the three syndromes — Pāndu, Kāmalā and Halīmaka

Rgveda prescribes its treatment with morning sun-rays [108] In A V red cow's milk[109] and the drug Añjana[110] are said to be efficacious in the disease Kauśikasūtra prescribes intake of cooked rice mixed with Haridrā and anointing the same on the body [111]

8. Hṛdroga:

RV mentions Hrdroga [112] AV reads Hrdayāmaya[113] and Hrddyota [114]

Water has been mentioned as 'Hṛddyota-bhesaja'[115] (remedy for Hrddyota) It is also treated with morning sun-rays alongwith Hariman [116] Among the disease to be treated with the herb Cīpudru Hrdayāmaya is also mentioned [117]

9. Kāsa:

Kāsa is one of the complications of Takman Kāsikā has been mentioned as sister of Takman [118] Generally in such fevers respiratory tract is involved and consequently cough ensues

Worship of the Sun and some medicinal decoctions are prescribed for its treatment [119]

10. Krimi (worms).

Krimis have been described with various names and forms and affecting different parts of the body They are visible as well as invisible and are found almost everywhere in mountains, forests, plants, animals, water and also within human body They affect children and foetus of the pregnent women generally [120]

Sun stands foremost among the destroyers of *Krimis* [121] Other gods like *Agni* and *Indra*[122] also destroy *Krimis* Water is said as destroyer of *Raksas (Krimi)*[123] Among inorganic substances, *Añjana* and *Sīsa (lead) are krimighna Ajaśrṅgi, Prśniparnī,* Baja (Sarṣapa), Apāmārga, Kustha and *Guggulu* are mentioned as krimighna among plant drugs Amulets of *Śaṅkha, Pratisara* and *Śatavāra* are prescribed in *Krimi* [124]

11. Jalodara (Ascites):

Though not explicitly mentioned in the Vedic Samhitās, Jalodara is indicated with its character in RV[125] as well as AVS [126] These hymns are offered to Varuna who is the Lord of waters and inflicts a person with this disease if he violates the moral order King Hariścandra was victimised with the disease by curse of Lord Varuna and was also released from His pleasure [127]

12. Retention of urine:

Description of retention of urine and its treatment by catheterisation with the hollow reed is quite vivid [128] The connection of urine with intestines is quite original in view of the Indian Pathology which maintains mutual relation of urine and faeces through body-fluid (*Ap-dhātu*) and consequently a close interdependence between retention of urine and diarrhoea [129] In case of diarrhoea, urine becomes less and its independent flow is lost, it comes alongwith the urge of faeces Restoration of flow of urine independent of faeces is one of the signs of the recovery from diarrhoea [130] Hence to connect the hymn with constipation is erroneous Sāyana and Keśava also, being confused, indicate it in difficult defaecation [131]

Keśava, in his comments on KSS, says that iron rod (probe) is introduced in urethra to remove the obstruction, if any The patient is also given to drink a decoction of some herbs duly potentiated with incantation [132].

13. Insanity:

A clear picture of insanity is found in AV Psychic disturbance and incoherent and exceesive speech are its main characters It is caused by the attacks of *Deva, Raksas, Piśāca* etc [133] Even in post-vedic period, its connection with supernatural agents is not at all severed [134]

In one of the verses, there is reference of its treatment by an expert physician [135]

14. Kilāsa — Palita[136]

Kilāsa is vitiligo causing deficient pigmentation and consequent white spots on skin [137] *Palita* is greying of hairs.[138] It is only similarity in colour that has prompted the seer to put both *Kilāsa* and *Palita* together

The treatment is application of the herbs — *Rāmā, Krśnā, Asiknī* and *Rajanī* — in the prescribed manner In *Palita,* the grey hairs are pulled out and the above paste is applied on the scalp [139]

Loss of hair (*Khālitya*) is also dealt with It is treated with the herb '*Nitatnī*'[140]

15. Apacit:

Apacit has been described with great detail is AV *Manyā, Grīvā* and *Skandha* are its three main locations They have also been mentioned in several types according to colour and their suppuration or otherwise [141] Sāyana has taken it as Gandamālā [142] Bloomfield has followed him Roth, Zimmer and others take it as insect-bite [143]

Treatment consists of prayers offered to the gods Sun and Moon [144] Apacits are punctured with the root of '*Munideva*' (*Venudārbhūsa* plant according to Sāyana)[145] Apart from it, application of leeches for blood-letting is also prescribed External application of the following is also prescribed — (1) Conch-shell rubbed and applied to apacits while reciting the hymn, (2) In the same way, the saliva of dog is to be applied (3) The dirt of teeth is also to be applied in the same manner, (4) Sprinkling powdered salt and spitting over it [146]

16. Vidradha:

It has come always with *Visalpaka* [147] By associations, both seem to be skin disorders, *Vidradha* is '*Vidradhi*' (abscess)

17. Visalpaka:

It is also mentioned under the diseases of different organs [148] It seems to be '*Visarpa*' of the later Samhitās.

In the treatment of both *Vidradha* and *Visalpaka*, paste of '*Caturaṅgula-Palāśa*' is applied on the body of the patient According to KSS [149] Sāyana has used this word meaning 'A piece of *Palāśa* measuring four fingers.[150] The tradition recorded in the *Caraka-samhitā* is of the application of the paste of the leaves (*Palāśa*) of *Caturaṅgula (Āragvadha)*.[151] In this light the reading of KSS and Sāyaṇa has to be re-examined

18. Śīrṣāmaya:

Śīrṣāmaya, Śīrṣakti and *Śīrṣanya roga* have been read together [152] *Śirsakti*[153] has been interpreted as *Śiroroga* by Sāyana[154] which may be headache *Sīrsāmaya* may be other diseases of head. *Śirṣanya* is a wider term covering the disorders of the organs such as eye, ear etc. situated in head

19. Vātīkāra[155]

Vātikrta[156] is also the same *Pippali*[157] and *Visānakā*[158] have been said as the remedy for *Vātīkṛta*.

20. Kṣipta:

Pippalī is said as the drug for the disease *Ksipta* [159]

21. Āsrāva[160]

Some take '*Āsrāva*' as polyuria or discharge, generally, of fluid through urine, stool, wound etc [161] In my opinion, *Āsrāva* is accidental haemorrhage '*Roga*' and 'Āsrāva' are read together[162] to denote two distinct types of diseases — *Nija* and *Āgantu* — recognised in later texts Sāyana could not discriminate this and as such has distorted the sense of '*Vātīkrtanāśanī*'[163]

There are hundreds of drugs, though unnamed, to check *Āsrāva*

22. Grāhi:

In RV there is mention of a disease which arises in joints [164] It is difficult to say if '*Grāhi*' of AV (20 96 6) is the same

Daśavrksa is prescribed for treatment of '*Grāhi*' which seizes joints [165]

Apart from the above, there are disorders, unnamed, inflicting different parts of the body. In this connection the parts of the body have been enumerated and prayers are offered to *gods* to remove them [166]

Methods Of Treatment

Indian tradition had, from the very beginning, a deep faith in a supernatural reality trascending the individual and the universe which creates, sustains and leads to dissolution This itself infinite has infinite manifestations in various forms Matter, plants, animals, man and gods are His manifestations Diseases may be caused by unknown effect of natural agents or disturbance in innate factors The former were treated by offerings and prayers to gods and other natural agents The latter are treated with external and internal application of drug-remedies These two are termed as *Daivavyapāśraya* (godly) and *Yuktivyapāśsraya* (rational) *Cikitsā* respectively in post-vedic texts [167] In vedic medicine, this division is indicated quite distinctly by the two epithets '*Raksoha*' and '*Amīvacātana*' given to Bhisak [168] The physician was smultaneously treating Raksas (supernatural unseen causative agents) and *Amivā* (innate diseases) with recitation of hymns and application of drugs Incantations divinised the drugs and thus enhanced their powers It is also a plausible hypothesis that Atharvans and Āṅgirasas represented these two aspects of medicine

With gradual development and systematization of the knowledge of pathology, gradual advancement of rational medicine is observed dominating over the religious medicine In *Atharvaveda* the obvious increase in the number of disease and drugs evidently shows the position of development further than in RV Thus there is no surprise that in post-vedic period the AV was regarded as the source of medicine There is no doubt that the supernatural aspect is predominant in the vedic period but, at the same time, it would be incorrect to say that the vedic medicine was essentially a magico-religious systems

Evidentally, the following methods of treatment were employed in vedic medicine —

1 Prayers and offerings to gods — like *Indra*, *Varuna*, etc

2 External application of drugs — such as paste of *Bhrngarāja*, *Haridrā*, *Indravārunī* and *Nīlikā* in *Palita* and *Kustha* in *Rājayaksma*, leprosy etc

3 Internal administration of drugs — such as taking milk boiled with *Lāksā* in case of acute injury, use of carminative drugs like *Harītakī* in cases of obstruction of urine, stool etc

4 Mechanical intervention — such as catheterization in case of retention of urine

5 Surgical operation — such as puncturing of glands,[169] obstetrical operations[170] in (women), treatment of ulcers and wounds[171] etc There is also

sufficient indication to show that plastic surgery and orthopaedics were also in practice [172]

6. Use of natural remedies like Sun-rays, fire, water and air

   (a) Sun-rays — Expsoure to the rays of the Sun particularly the rising one (*Udyannādityaḥ*) is advocated as remedy in many disorders such as worms, cardiac disorders, anaemia, jaundice etc.[173]

   (b) Fire — is mentioed as destroyer of *Raksas* aş well as *amīvā* [174] and is applied in various ways in different disorders

   (c) Water is regarded as Panacea (*ViśvaBhesajī*)[175] and is said to be endowed with miraculous therapeutic properties. Probably it is so because water is related to *Prāna*[176] and it is difficult to sustain it in case of dehydration

   (d) Air is also said as *Bhiṣak.*[177]

Pathological concepts were in the process of evolution in vedic age. However, the etiology was quite defined Some diseases originated by faulty diet and movement while others were caused by micro-organisms (*Krimis* or *Bhūtas*)[178] Food, drinks and beddings are mentioned as media of infection with *Bhūtas* [179]

The vedic seers also developed the knowledge of Anatomy and defined the identities of different organs of the human body This is evident from a number of hymns mentioning elimination of disorders from the organs of the body [180] Some names are quite typical such as *Vanisthu, Plāśi, Halīksna, Matasnā* which became obsolete in present times while others like *Mastiska, Hrdaya, Pliha, Kloma* etc are still continuing There is also mention of cutaneous (*tvak*) and subcutaneous parts like *Dhamanī, Snāyu,* etc There was clear knowledge of bones, bnone-marrow and joints Similarly, the organs of urinary and reproductive systems are clearly spelled out The word '*Gavīnī*' denotes both ureter and fallopian tubes [181] Surprisingly it is absent in classical literature of Āyurveda but has been picked up and revived in modern times [182]

It is difficult to conjecture as to what was the source and method of the anatomical knowledge of the vedic seers Most probably they acquired this knowledge by observation on the dissected bodies of the animals like goat and horse during sacrifices According to religious injunction, each organ of the animal was defined and named and thus the priest and his followers became quite conversant with them [183] The bony skeleton supports the body and as such has been symbolically related to *kāla* (time) which supports the universe The number of bones in human body has been fixed the same as the number of days in a year e g 360 In vedic ritual texts, there is reference of substituting the skeleton of the *Purusa* with 360 leaves of *Palāśa* tree [184]

Physicians were highly respected in the society *Aśvins,* the twin gods, had great impact on the people and physician was taken as their representative [185] Gradually

medicine became a profession and as such it was looked down upon Physician was enlisted as one of the victims at *Purusamedha* [186]

Preventive Medicine

It is alleged that there is no preventive medicine in vedic age [187] but on examination of facts it would be evident that the position is quite reverse The people in vedic times were much conscious about their integral development e g physically, mentally and spiritually Hence they were desirous of long life full of strength and vigour In a number of hymns they expressed their desire while praying to *gods* that they might attain longevity (*Dīrgha Āyus*) with full span of life (one hundred years) having normal functioning of all the senses and organs [188] The word '*Śarad*' here is quite suggestive. Besides denoting 'year' it means 'autumn season' when, after the rainy season, many dreadful epidemics broke out killing so many persons One could cross this safely only when he could be able to prevent these disorders

Yajñas (sacrifices) were performed from time to time particularly during the juncture of seasons (*Ṛtusandhi*) to purify the environment which prevented most of the epidemics effectively [189] A social code of conduct was also formulated to check socially transmittable diseases This was given a concrete shape in later law texts and was also incorporated in post-vedic medical texts in the form of *Sadvṛtta* [190]

Their keen desire for prevention of diseases is also testified by their great emphasis on sanitation and cleanliness [191] They led a clean life not only outwardly but also inwardly which protected them from various infections from outside and mental stress They also took nourishing and balanced diet which provided them general immunity Moreover, there were *Rasāyana* drugs which provided strength and power, promoted life and prevented disease and senility [192]

Apart from main currents of medicine and surgery as shown above, much work was done in the domains of obstetrics including pediatrics,[193] toxicology,[194] aphrodisiacs,[195] *rasāyana*[196] and diseases of eye, ear etc [197] there is detailed description of animal poison particularly snakes and their treatment More emphasis was laid on treatment of *Bhūtas, Raksas* etc [198] which included invisible agents and micro-oranisms These formed the nucleus on which eight *Aṅgas* (specialities) of Āyurveda were defined and developed

Data From Brāhmaṇas, Upaniṣadas And Kalpasūtras

In *Śatapatha Brāhmana* there is the famous legend of Cyavana who is the central pivot of the preparation '*Cyavanaprāśa*' (4 1 5 1-16) The word 'sleṣman' for '*Kapha*' is first found in this very text (13 4 4 6) which made an important landmark in evulution of *Tridosa* theory Besides, there are many important references about anatomy, physiology and drugs

In Aitareya *Brāhmana*, the sense organs and their functions are defined (5 22) *Añjana* (collyrium) promotes the eyesight (*Tejo vā*

etadaksnyoryadañjanam — 1 3) Presentation and position of foetus is also indicated (ibid) Hariścandra, the king of Iksvāku clan, fell victim of *Udararoga* by the wrath of *Varuna* (7 15)

In Jaiminiyā *Brāhmana*, many important materials are found The legend of Apālā and the treatment of her diseases is repeated here (1.220-221) Kaśīti Saubhara was attacked by consumption and recovered after offering prayer to Vāta (*Vāta evāsmai bhesajamakarot* — 3 266) There are also references of *Mūtragraha* (1 254), *Andhatā, Bādhirya, Vāgghāta, Śirahpāta, Udaravikāra* (1 259), *Palita* (2.285,329), *Harimā* (2 324), *Visūcī* (2 351, 3.8), *Arśa, Vardhma* (2 434), *Jvara* (3 24), *Pāmā* (3 115) and in surgery, of wounds, burns (and consequent scar). Plastic surgery is indicated (1 358) In the legend of Indra and Ahalyā transplantation of testicles is indicated (2 79) There are two references of revival of the almost dead child after accidental injury (3 94-95,202) Saturation of eyes with ghee (1 167) ,and treatment of conjuctivitis and consequent blindness is mentioned (1 168) There is a '*Caksusya*' hymn for prevention of eye disorders (*Ājarasaṃ hāsya caksurna vyeti* 3 102) Similarly, *Kārnaśravasa* hymn is for alleviation of deafness (3 163) The '*Jarāmūrīya*' sacrifice is meant for geriatric purposes (*etad had vai satram jarāmūrīyam, jarayā vā hyevasmān mucyate mrtyunā vā* — 1 51) Anatomical informations are also there (1 49,73,254,259,342,414,3 65) About drugs, explicit reference is found on *Virya* which is responsible for drug action (*Viryena vai karma kriyate* — 1 303)

In *Aitareya Āranyaka*, sage Bharadvāja is mentioned as the most revered one among the seers and having the longest span of life (*Dīrghajīvitatamah*) and as such those desiring these qualities praise him (1 2 2 6) The opening chapter of CS entitled '*Dīrghañjīvitīya*' and describing the leading role of Bhardavāja in development of Āyurveda seems to have been influenced by this The ovum is a form of *Agni* and the sperm the same of *Āditya* (2 3 7 19), The comm explaining it says that the body of the progeny having six sheaths (Sat Kosa) derives three red (*Tvak, Rakta* and *Māmsa*) from mother and three white (*Medas, Asthi* and *Majjā*) from the father The five *Mahabhūtas* are the basic components of creatures (2 6 1 25) It also mentions 360 bones (3 2 1 7, also see 3 2 1 8) Signs and dreams forcasting death (*Arista*) are also described (3 2 3 10)

Śāṅkhāyana Āranyaka adds amulets of *bilva* and others (12 4 8)

Upanisads contain the philosophical vision of ancient seers which includes many facts and concepts related to medicine *Chāndogya Upanisad* mentions five types of *Vāyu* (also called as Prāna) which have been said as *Brahmapurusa* and *Dvārapa* (gatekeeper) of heaven and world (3 13 1-6) Digestion and metabolism has been explained essentially (6 5,6) *Nādīs* (vessels) attached to heart are of four colours — white, blue, yellow and red (8 6 1) There is reference about foetus covered by *ulba* (membrance) and lying in for nine or ten months and then delivered (5 9 1) Age of man is divided into three phases each being of 24, 44 and 48 respectively make the total of 116 (*sa ha sodasam varsaśatam ajivat* — 3 16) These three phases are said to have

predominance of *Kapha, Pitta* and *Vāta* respectively in later literature The diseases *Pāmā* and *Upatāpa (fever) have been mentioned (4.1 8,6 15 1). Life in plants has been demonstrated (6.11.1-2)*

Brhadāranyaka Up also contains a lot of medical materials Different parts of horse are enumerated (1 1.1) Five types of *Vāyu* are also mentioned (1 5 3) seventy two thousand *Nādis* attached to heart are mentioned (2 1 19) It may be noted that this information has been adopted in *Tantra* but not in Āyurveda There are *Nādis* named *Hitā* which are very minute and finely divided which transport *Rasa* of white, blue, grey, pale, and red colour (4.3 20). This is a very clear indication of the blood circulating through different types of blood vessels (also see 4 2 3) The word '*Hrdaya*' is made of three letters, — *hr, da* and *ya* meaning respectively the receiving, distributing and moving functions of the heart (5 3 , also SB. 14 8 4) Organs of senses and actions (2 4 11) and also the parts of eye have been described (2 2 2) How *Dadhyan of Atharvanic* tradition trasmitted the *Madhuvidyā* to *Aśvins* is described here (2 5 17) This legend is concerned with transplantation of organs (*Yajnvasya Śiraśchedanaprati sandhānādivisayadarsanam-Sankara*) Different stages of dream are defined with their essential characters (4 3 7-11) Reproduction alongwith contraception has been described elaborately (6 4)

Garbhopanisad deals with embryology and contains informations about development of foetus, congenital deformities etc

The period of Upanisads is very important hisotrically because this was an era of deep thinking, inquisitiveness, discussions, and patient inquiry into the root cause which led to evolution and systemization of fundamentals of Āyurveda

The *Sūtra* literature (*Śrauta, Grhya, Dharma* and *Pitrmedha Sutras*) abound in useful informations *Śrautasūtras* name a number of plants prescribed for specific purposes in sacrifices After sacrificing the animals, they enumerated each organ and thus throw light on the knowledge of anatomy at that time (see *Kātyāyana Srautasutra* 1 3 32-37,8 21,25 8 15, *Baudhāyana* 4 8 9, Āpastamba 1 2 30,9 3 56, *Vārāha* 1 2 1 30, Āśvalāyana II 6 9) Āśvalāyana once mentions '*Mahāroga*' (I 2 7 '*mahārogena vā' bhitaptah*) Nārāyana in his commentary interprets it as *Ksava, Kustha,* etc (*Ksayakusthādinā' sakyaparihārenātipīditah*) There is also a reference of removal of the foetus (*Baudhāyana* 14 14)

Grhya Sūtras have detailed description of the rites of *grhastha* (householder) such as *Vivāha, Garbhādhāna, Pumsavana, Jātakarma, Upanayana* etc It has prescribed pasting of labour room with some herbs to destroy the *Raksas* (Sānkhayana Gr 1 23 1) *Kausītaka* Gr (1 20 1-2) prescribes *Karnavedhana* (piercing of ears) There is reference of both '*Vrkkas*' being taken out from the back of a living cow (ibid 5 3 3 — '*jīvantyāh (goh) vrkkau prsthatah uddhrtya panyorādhāya bhunakti*, also *Āśvalāyana* Gr 4 3 20) There are also details about 360 bones in the human body (ibid 5 6 5-6) *Bodhāyana* Gr has mentioned treatment of baby

attacked by fever, *Grahas* or *Bhūtas (Kumārānām grahagrhītānām jvaragrhītānām Bhūtopasrstānām . . agado haiva bhavati* — 3 7 27) There is also mention of *Śvagraha* and *Śaṅkha* affecting the children and their treatment (*Āpastambīya* Gr. 7 8 1-4) *Pāraskara* Gr also indicates to *Śvagraha* (1 16 24, also Bharadvaja Gr. 2 7) In *Pitṛmedha* of *Bodhāyana* Gr (3 9 1-4) there is interesting reference of post-mortem lapratomy on a pregnant woman after death Her abdomen is opened and the foetus is taken out Then the wound is sutured and the body is cremated It is not clear as to who performed the operation but it seems that it must be some lady surgeon. There is also management of epidemics (ibid 4 20 1, 5 3 1-15) *Mānava* Gr (2 14) gives an interesting description possibly of mental derangement in the context of *Vināyaka (Vināyaka-Prakaraṇa) Jaimini Gr.* describes nine *Grahas (2 9) Āśvalāyana Cr.* mentions about *Dhanvantari-Yajña* (1 3 6,12 5) *Kauśikasūtra* presents a rich material regarding *Atharvanic* tradition of medicine

Dharmasūtras prescribe rules for conduct of individuals and society and also for cleanliness which go a long way in prevention of disorders Medicine was regarded as an effective instrument of social welfare Those adopting and practising it as profession for personal benefit by exploiting the people faced social boycott It is with this regard that to take food with (or from) a physician is prohibited (*Āpastamba* Dh 1 6 18 21, '*bhisak bhaisajyavrttih, dharmārtham tu ye sarpadastādīnscikitsanti te bhojyānnā eva-comm*) Once it is with regard to surgeons (*Cikitsakasya* Śalyakrntasya annamanādyam — ibid 1 6 19 14, also Manu 4 211 212 *hiranyakeśi* Dh 26 5 90,116) *Vaikhānasa Dharmapraśna* (3 12 4-7) mentions that the person born of Brāhmana in a Ksatriya woman adopts Atharvanic or at last the medical profession but this is not mentioned in *Śaṅkha-Likhita* Dh while it enumerates a number of diseases (376-378) The topic of *Sadvrtta* (code of good conduct) has great importance in Āyurveda for promotion of life and prevention of disorders There is great semblence in this and that prescribed in *Dharmasūtras* Some passages of *Visnusmrti* (61 1-5) are found in toto in Vāgbhata's *Astāṅga-saṅgraha* (SU 3)

This, in vedic age, foundation of rational medicine was laid down which was consolidated, after formulation of basic concepts in later period Āyurvedia did not emerge out of a void or vacuum but on a very sound footing which was prepared during the vedic period The vedic seers had profound knowledge about diseases and drugs which was handed down from generation to generation The word 'Āyurveda' given to medicine in India testifies its continuous link with vedic tradition It is further evident from the fact that surprisingly a number of vedic terms and remedies are found in classical Āyurveda and practised even in modern times

It is said that seemingly there is a chasm between the knowledge contained in *Atharvaveda* and the calssical Āyurveda [199] In fact, this is the period in which the basic concepts were defined, developed and systematized, disease-syndromes were identfiied, remedies classified according to pathology and the drug action precisely studied All this is documented first by Agnivesa in his treatise As there is no evidence of existence of any other treatise earlier than this, it is difficult to say what was the actual method of documentation, still it may be conjectured that the knowledge was

transmitted orally from generation to generation Existence of codified texts also can not be denied which were lost with process of time

DATE OF THE VEDIC PERIOD

The *Vedas* were handed down from mouth to mouth from a period of unknown antiquity and in Indian tradition it is generally believed that they were never composed by men (*Apauruṣeya*) Thus it is very difficult to fix the chronological limits of the Vedas *Ṛgveda* is the oldest one BG Tilak has proposed the date as 4000 BC [200] Jacobi also holds the same view. Generally the upper limit of the vedic period is fixed as 2000 B C.[201] Filliozat has, on the evidence of *Purānas*, fixed the date of *Atharvaveda* as 1400 B C.[202] It may be even higher as the canto XX is a later addition in which the epoch of *Parikṣit* is mentioned. Further 500 years may be assigned for the development of *Brāhmaṇas, Upanisads* and other ritual texts It is assumed that before emergence of Mahāvīra and Buddha the vedic literature acquired definite shape in its various ramifications [203] Thus the period from 2000 B C to 1000 B C may be taken as the main vedic period.

REFERENCES AND NOTES

1 Śarmā Hemarāja — *Kāśyapa-samhitā*, Introduction p 3-4
2 S S Su 1 6, CS Su 30 21
3 *Nyāyasūtra* 2 1 12
4 *CS. Su* 1 3-5, CI 1 4 3-6
5 *SB*. 4 1 5 17, also Tait Sam 6 4 9, Ait Br 1-8 Kaśyapa mentions it as the fifth Veda (KS p 61-62) Also BVP ch 16
6. *SS Su* 1 20
7 *BVP*. ch 16
8 *RV* 8 20 23-26, 5 53 14,7 56 25,2 33 13, AVS 4 13 4
9 *RV* 1 24 9, 1 25 12,7 87 7
10 *Ait. Br* 7 3 15
11 *RV* 1 12 16 (here Agni is called as '*Amīvacātana deva*' god, destroyer of diseases), 1 79 249,252,3 15 1,7 15 10,13, *AVS 1 28 1-2,5 29 1,3 31 1*
12 *Vaj Sam* 16 5
13 *RV* 1 43 4, 114 5,2 33 2,4,7,12,5 42 11,7 35 6,46 3,8 29 5, *Vaj Sam* 3 59,16 49, AVS 2 27 6
14 *RV* 1 35 9,50 11,191 8,7 66 16, 10 37 4,7, AVS 2 32 1-6, 5 23 6, 25 12
15 *RV* 2 21 6,4 19 9, 8 1 12, 91 1-7, AVS 5 23 1-13
16 *RV* 10 17 2
17 *RV* 1 34 6, 116 15, 157 4, 2 9 4 6 62 7, 7 8 19 AVS 6 102 1-3 (for transplantation of organs see RV 1 116 12, 117 22 119 9 181 4 (Savana) SB 14 5 5 17 also Up 2 5 17-17 with Sankara's comments thereon
18 Yāska 12 1 1 with Durga's comments thereon
19 Mukhopadhyaya G N *History of Indian Medicine*, vol 1,p 136
20 Sharma P V "Aswins and their miracles", *Nagarjuna*, Dec 1964
21 RV 1 112,5, 116 24, 117 4
22 Ibid 1 112 5, 116 11, 117 5, 118 6, 119 6, 7, 39 8

23. **Ibid** 1.112.6
24 **Ibid** 1 112.11, 116.7
25 **Ibid.** 1 112.15
26. **Ibid**
27. **Ibid** 1 116 10, 117.13, 118 6, 5.74 5, 75 5, 7.68.6, 71.5, 10.39.4
28 **Ibid.** 1 116.13, 17 24, 6 62 1, 10 39 7, 65.12
29 **Ibid** 1.116.19
30 **Ibid** 1.116.21
31 **Ibid** 1.117.7
32 **Ibid.** 1.117.8, 24
33. **Ibid** 1.117.11
34. **Ibid.** 1.158.4-6
35 **Ibid.** 4.15 9-10
36 Ibid 1 157 5, 5.78 7-9
37 Ibid 1 119.7
38 Ibid. 1 112 16, 116 22, 7 68 8
39 Ibid 1 112 7, 16, 116 8, 117 3, 118 7, 119 6, 180 4,, 5 78 4; 7 71 5; 8 5 25, 10 147 1
40 Ibid. 1.112 5, 118 7
41 Ibid 1 112 8
42 Ibid 1 112 10, 116 15, 117 11, 118 8, 10 39 8
43 Ibid 1 112 8, 116 16, 117 17, 120 6
44 Ibid.1 117 8
45 Ibid. 1.112 3, 116 22, Ibid 20, 118 9, 119 10,7 71 5, 10 39 10
46 *CS* Ci 1 4 41-46
47 *SS SU* 1 17
48 Mukhopadhyaya op cit p 146-150
49 *RV 10 97 12, 10 163*
50 *AVS* 9 8
51 *CS Ni 1 5*
52 *RV* 10 161 1 (*Aprajñātah śarīragato rogah-Sāyana*)
53 *AVS* 20 96 6
54 *SS U* 41 3
This reminds of the Yaksma's following the wedding procession (see RV 10 85 31)
55 Filliozat takes *Rājayaksma* as consumption and *Ajñtayaksma* as unknown consumptive ailment — The classical Doctrine of Indian Medicine, p 107 but Sāyana has taken it in the sense of disease in general (See his comm on AVS 19 44 2)
56 *AVS* 5 4 9
57 Ibid 6 59 2
58 Ibid 6 127 1,3
59 Ibid 6 85
60 Ibid 19 36
61 Ibid 12 2 1, 2,14
62 Ibid 19 44 45
63 Ibid 19 38

64 Ibid 2 8; 3 7

65 '*Kṣetre paraksetre putrapautrādiśarīre cikitsyah ksayakusthādi — doṣadūsitapitṛmātrādiśrīrāvayavebhyah āgatah ksayakusthāpasamarādi-rogah ksetriyah ityucyate*' — Sāyana on AVS 2 8 1, '*ksetriyam paraksetre cikitsyam mātāpitrśarīrādāgatam ksayakusthāpasmārādikam*' — Sāyana on AVS 3 7 1

66 Filliozat op cit pp 112-115

67 Karambelkar *The Atharvaveda and the Ayurveda*, Nagpur, p 240, 1961

68 Kenneth G. Zysk· *Religious Healing in the Veda*, Philadelphia, p 21, 1985

69 Shastri Ramgopal. Vedom Men Āyurveda, Delhi, p 118, 1956

70 *AVS.* 2 8

71 Ibid 4 18 7

72 Ibid 2 8 3

72 Ibid 3 7 1-2
(*ksetriyavyādhibhaisajye harinaśrṅgamanerbandhanam, tacchrṅgasahito-dakapāyanam* Sāyana)

74 *AVS* 3,7 5

75 Ibid 7 76 (80) 3-4

76 '*Jāyānyaṃ nirantarajāyāsambhogena jāyamānam ksayarogam' jāyānyaśabdo rogaviśesaparah, sa ca jāyāsambandhena prāpnotīti Taittirīyake samāmnāyate*' — Sāyana on above

77 'The term therefore stands for all types of suppurative ailments and of·ulcers appearing externally ' 'In other words, the *Jāyānya* is to the *Rājayaksma* what a 'phthisis' (and not tuberculosis) is to general consumption 'Filliozat, op cit 9 107

78 *AVS* 19 44 1-7

79 Filliozat op cit p 106

80 Zysk, op cit p 18

81 AVS 1 25, 5 22, 6 20, 7 116 1-2

82 Ibid 1 25 3

83 Ibid 1 25 4

84 Ibid 1 25 1,2,4

85 Whitney W D *Atharvavedasamhitā*, vol I p 25
In particular places of *Takman*, Filliozat identifies '*aṅgas*' as 'Bengal' (Filliozat op cit p 119) which is at present eastern Bihar, *Vanga* is Bengal

86 *AVS* 1 25 1-2
'*Tatra tathāvidhe agnau he jwara te tava paramamutkrstam janitram janma āhuh kathayanti' 'agnau tava janmetyarthah*' — *Sāyana* on above

87 *KSS* 29 18

88 AVS 6 20 2,

89 Ibid 19 34 10

90 Ibid 3 9 8

91 Ibid 5 4 1,2

92 KSS 26 25 f n

93 *AVS* 5 22 12
Here *Balāsa* is said as brother, cough as sister and *pāmā* as nephew of *Takman* '*Bhrātrvya*' does not mean 'cousin' but ⅔nephew'

94 Ibid. 6 14 1-3, 6 127 1-2
'Balamasyati ksipatīti balāsaḥ kāsaśvāsātmakah ślesamrogah' *'balāsam ślesmarogam'*, — Sāyaṇa on above *'Balāsah Sannipātādih'* — Sāyana on 4 9 8
95. Madhukosa on *Mādhavanidāna,* 10 2
96 Filliozat: op cit p 117,118
97 *AVS* 4 9 8
Takman, Balāsa and *Snake* (poison) — these three are slaves of *Añjana* The third word here is *'Ādahi'* which has been interpreted by Sāyana etc as *Ād+ahi (snake)* but it may mean 'generalised heat' as well
98 Ibid.6 127 1-2
99 Ibid 19 34 10
100 Ibid 8 7 10
101 Ibid. 4 13 3 (*Pāpaṃ vyādhinidānam-Sāyana*), 6 11-1 (*Rapaḥ roganidānanabhūtaṃ pāpam*), 2 (*Rapah pāpam rogavaham*)
102 RV 8 20 26 (*Rapasaḥ pāpaphalasya rogasya*), 10 97 10 (*Rapah pāpam vyādhilaksanam*)
103 *RV* 7 50 1. (*Rapasā Śabdena*)
103a Zysk, op cit p 27
104 *RV* 7 50 4,6, 57 3, AVS 4 13 2-3, 6 91 1, 5 4 10
105 *AVS* 1 22 1 (*Harimā kāmalādijanitah śārīro haridvarṇah*-Sāyaṇa)
RV 1 50 11 (*Harimānam śarīragatakāntiharanaśīlam bāhyam rogam, yadvā, śarīragatam haridvarnam rogaprāptam vaivarnyamityarthah*)
106 AVS 1 25 2 (*Haritasya devah*), 3,5 222 (*Ayam yo viśvān haritān krnoṣi*) 6 20 (*viśvā rūpāni haritā krnosi*) In *RV* 7 103, the *Harita* colour of frogs is taken as green by Sāyana Thus *'Haritā'*, in fact, is pale The anaemic patient of bleeding piles is simulated with frog (*Mādhava-nidāna* 6 26 (*Bhekābhah pīdyate duhkhaih śonitaksayasambhavaih*)
107 *Śuka, Ropanākā* and *Hāridrava* are the three yellow birds in which the disease is to be sent — *RV* 1 50 12
108 *RV* 1 50 11
109 *AVS* 1 22 3
110 Ibid 4 9 3
Añjana has been said as *'Haritabhesaja'* (drug for *Harita*-anaemia)
111 *KSS* 26 14-21
112 *RV* 1 50 11
113 *AVS* 6 14 1,5 30 9,6 127 3
114 Ibid 1 22 1
115 Ibid 6 24 1
116 *RV* 1 50 1
117 *AVS* 6 127 3
118 Ibid 5 22 10-12
119 *KSS* 28 15-16
120 *AVS* 2 31 1-5, 5 23 1-13
121 Ibid 2 32 1,5 23 6
122 Ibid 5 23 1,13
123 *Tait Sam* 3 2 3 12

124. Ram Gopal Shastri op.cit pp 74-82
125 *RV.* 7 89 2,4
The former indicates the abdominal enlargement while the latter indicates the thirst being one of the annoying symptoms of ascites The simile of *'drti'* (leather bag) has come down from *RV* to the classical Āyurveda (See *CS Ci* 13 47)
126 *AVS* 4 16 7
Also see 1 10 1-4,7 88 (83) 1-4 In the introductory remarks of the former, Sāyana says that it is for alleviation of ascites (*Jalodararoganivrttaye*)
127. *Ait Br* 7 15
128 *AVS* 1 3.1-9
129. *CS. Ci* 19 5, SS U 40 6
Apdhātu liquifies the faeces in diarrhoea This *Apdhātu* comprises of ***Rasa, Jala, Mūtra, Sveda, Medas, Kapha, Pitta, Rakta,*** etc (Madhukosa on *MN.* 3 4)
130 *MN.* 3 23
131 See Zysk, op cit p 70, ***mūtrapūrīsanirodhe*** (Sayana) *'Duhkhamūtrakarane duhkhapurīsakarane'* (Keśava on *KSS* 25 19) The word *'Pramehana'* (KSS 25 10) denotes 'diuretic' and not laxative
132 *KSS* 25 10-19 with Keśava's *comm*
133 *AVS.* 6 111 1-4
134 *CS Ni* 7 10-16,
135 *AVS* 6 111 3 (*Krnomi Vidvān bhesajam*)
136 Ibid 1 23 1-4, 1 24 1-4
137 *'Kilāsasya śvitrasya'* (Sāyana on *AVS* 1 24 2) In introduction also he says *'Śvetakusthāpanodanāya'* At other places, he interprets it as *'Kustha'* which also means *Śveta Kustha* (leucoderma)
138 *'Palitam jarāvasthāprāptam kesānām śauklyam'* — Sāyana on *AVS* 1 23 1
139 *KSS* 26 22-24 Also see Keśava's *comm (Atha Śveta-kusthabhaisajyānyucyante)*
140 *AVS* 6 21 1-3, 136 1-3, 137 1-3
141 Ibid 6 25 103, 83 1-4, 7 78 (74) 1-2, 80 (76) 1-2
142 *'Gandamālāh'* (Sāyana, 6 25 1) *'Dosavasād apākacīyamānāh galādārbhya adhastāt prasrtāh gandamāhlāh'* (6 83 also 7 78 (74) 1
143 Macdonell-Keith *Vedic Index*, vol 1, p 24
144 *AVS* 6 83 1 (*Sūryah krnotu bhesajam candramā vo 'pocchatu*)
145 Ibid 7 78 (74) 1 (*Atha vā munerdevasya iti padadvayena dhanuhprakrti-bhūto venudārbhūsasanjñakavrksa ucyate*)
146 See Sāyana's introduction to the hymn 6 83
147 *AVS* 6 127 1,3, 9 8,20
148 Ibid 6 127 1,3, 9 8 2,5,20
149 *KSS* 26 33-40
150 Introductory notes on 6 127
151 CS SU 3 17 (*Parnāni pistvā caturangulasya*)
152 *AVS* 9 8 1
153 Besides above, see 1 12 3, 12 2 19-20

154 *'Śīrsam śıraḥ añcatı gacchati vyāpya bādhate ıtı śırsaktıh śırorogah'* — Sāyana on *AVS* 1 12,3
155 *AVS* 9 8.20
156 Ibıd 6 109 3
157 Ibıd 6 109 1-3
158 Ibıd. 6.44.3
159 See 157
160 Ibıd 2.31-6, 6.44.1-2
161 Sāyana's ıntroductory note on AVS 2 3
162 *AVS* 2 3 2-5, 6.44.2
163. *'Vātī āsrāvasya rogasya śoṣayıtrī krtanāśanī krtaṃ rogasya nıdānabhūtaṃ duṣkarma, tasya nāśayıtrī bhavetyarthah'* (Sāyana on *AVS.* 6 44 3) *Āsrāva* ıs an accıdental dısorder whıle *Vātīkrta* ıs an ınnate dısease
164 *RV* 20.163.6 (*Jātaḥ Parvaṇı Parvanı*)
165 *AVS* 2 9 1 (*Daśavrksa muñcemam raksaso grāhyā adhı yaınam ȷagrāha paravasu*)
166. *RV* 10. 163 1-6, *AVS* 2 33 1-7,9 8 1-22, 20 96 17-23
167 *CS. SU.* 11 54
168 *RV* 10 97 6 (*Tatra Vıprah prajño brāhmanah bhısagucyate raksohā raksohantā, amīvacātanah, amīvā vyādhıh, tasya cātanaścātayıta nāśayıtā*-Sāyana)
169 *AVS* 7 74 (78) 1-2
170 *AVS* 1 11 5
171 Ibıd 2 3 1-6
172 Ibıd 6 139 5,4 12 1-7
173 *RV* 1 191 8 10, 22 1, 50 11, AVS 2 32 1,8 6 12
174 *AVS* 1 28 1
175 *RV* 1 23 19-21, AVS 3 7 56 24 1-3
176 *Ch* Up 6 5 4 (Āpomayah prānah)
177 *RV* 2 33 13, AVS 4 13 3
178 Keśava on KSS 25 1 -3 (Tatra dvıvıdhā vyādhayah — āhāranımıttā anyaȷananapāpanımıttāśca, Tatrāhāranımıttesu carakabāhada-suśrutesu vyādhyupaśamanam bhavatı Aśubhanımıttesu atharvavedavıhıtesu śāntıkesu vyādhyupaśamanam bhavatı)
179 *AVS* 5 29 6-8
180 See 166
181 *AVS* 1 11 5, 3 6
182 Sen Gananath *Pratyaksa-śārīram*, Sanskrıt ınt p 72-73, Calcutta, 1924 (3rd ed)
183 Foe detaıls about anatomıcal knowledge see — Hoernle Ostology, Fıllıozat Op cıt ch 4 Harıprapanna sharma *Rasayogasāgara*, Sanskrıt ınt , pp 73-131, Varanası, 1983
184 *Kātyāyana-Śrautasūtra,* 25 8 15 (*Śarīranāśe trīnı sastıśatānı palāsavrntānām*) *Āpastamba-śrautasūtra* (9 3 56 — *'Trīnı sastıśatānı palāsavrntānām, taıh krsnāȷıne purusākrtı kurvantı*) has gıven detaıls of thıs as follows —

head-neck-50, upper extremity-100, lower extremity-140, trunk-50 and pubic region-20 making a total of 260

185 The History and Culture of Indian People, vol I, *p 398, Bombay, 1965* Also *CS, Ci* 1 4 40

186 Vaj Sam 30 10, *Tait Br* 3 4 4 1

187 *Zysk Op cit p 8 (the idea of health in a positive sense is wanting in vedic* medicine)

188 *RV* 10 18 1-6, AVS 2 13 4,8 2 1,8 (*Aristah Sarvāngah suśrujjarasā śatahāyanaḥ atmanā bhujamaśnutām*) 19.60 1-2, 67 1-8 '*Ojas*' which is responsible for immunity in the body is said to provide longevity (*AVS* 1 35 2)

189 Gopatha-Brāhmana II 1 19 (*Atho Bhaisajyayajñā vā ete yaccāturmāsvāni, tasmādṛtusandhisu prayujyante, ṛtusandhiṣu vai vyādhirjavate*) Also *Śānkhāyana Brāhmana* V 1

190 Jolly Julius (ed) *Visnusmrti*, 61 1-5, 14, 15, 79 16-18, *CS SU* 8 17-34

191 *HCIP*, I, p 528-29

192 *AVS* 2 4 1-6

193 Ibid 5 25 1-13, 6 81 1-3, 17 1-4, 7 111 1,8 6 1-26, 20 96 11-16, 1 11 1-6

194 *RV* 1 191 1-6, *AVS* 4 6 1-8, 7 1-7, 6 100 1-3, 10 4 1-26, 5 13 1-11, 7 88 1,65 10 1-3, 56 1-3, 7 56 1-8

195 *AVS* 4 4 1-8, 6 72 1-3, 101 1-3

196 Ibid 8 2 1-28, 1 35 1-4, 5 30 1-17, 1 1 1-4, 6 108 1-5

197 Ibid 6 16 1-4, 4 9 1,7 30 1,36 1

198 Ibid 1 8 1-4, 6 32 1-3, 1,28 1-4, 5 29 1-15, 4 20 1-9, 6 7 1-3, 1 7 1-7

199 Filliozat Op cit p 188

200 Dasgupta S N , *A History of Indian Philosophy*, Vol 1, p 10, Delhi, 1975

201 Macdownell A A *A History of Sanskrit Literature*, pp 9-10, Delhi, 1979

202 *Filliozat Op cit pp 83-85*

203 Winternitz M *History of India literature*, Vol I, p 288

MEDICINAL PLANTS IN VEDAS

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In vedic age, man had intimate contact with the environment particularly plants as he depended on them not only for his day-to-day requirements but also for necessary appliances and instruments for domestic use and agriculture In rites, ceremonies and sacrifices, plants played a great role in various forms They defined a group of trees which were useful in sacrifices (*Yajñiya vṛkṣa*)[1]. Moreover, plants were also used as *Bheṣaja* (drug) for alleviation of the diseases of man and animals

The ancient sages identified the plants and classified them from various angles According to form and size, they were initially divided into two — *oṣadhi* (herbs) and *vanaspati* (trees)[2] Later each of these was again sub-divided, *Osadhi* into *vīrudh* and *Vanaspati* into *Vānaspatya* (or *Vrksa*)[3] Thus four divisions of plants were made — *Vanaspati, Vānaspatya, Osadhi* and *Vīrudh* The same has continued in post-vedic texts [4]

The *oṣadhi-sūkta of RV* (10 97 1-23) is the authoritative document of the knowledge about plants in that age It says that plants came in existence much earlier from the *gods* and have innumerable places of origin and habitat [5] They were flowering and non-flowering and fruiting as well as non-fruiting[6] Their morphological characters are various (*Śatavicaksanāh*)[7] and they have various actions (*śatakratvah*)[8] They have potency like horse by which they conquer diseases in the patient[9] on circulating all over the body [10] Soma was the king of herbs[10] which were collected from far and near[12] out of which some were cultivated and others wild [13] They were also mixed together and helped each other[14] (in a compound formulation) Plants were used to make man (dvipad) and animals (catuspad) free from disease [15] Aśvattha and parna[16] (among trees) and aśvāvatī, somavatī, ūrjayantī and udojas[17] (among herbs) are the important plants When a physician, having complete knowledge of plants, administers them, they surely exhibit favourable results [18] To such expert, the herbs offer themselves (to be used) and thus the vipra (learned physician) destroys both raksas (accidental cause) and amībā[19] (disease caused by innate factors) To such qualified physicians the patient completely surrenders himself with all his belongings Plants are like mother which protect the people and wish their alround welfare [20]

In AVS, there is more developed classification of plants, they have been classified according to colour[21], morphological character[22], habitat[23] (growing in plants, hills and watery places) and use[24] (ātharvanī, āṅgirasī, daivī and manusyajā-used in beneficial rites, sorcery, godly remedies and general)

They experienced life in plants and compared the parts of plants with corresponding parts of man such as loma, twak, rakta, māmsa, snāyu, asthi and majjā

are compared with parṇa (leaves and hairs) bahirupātikā (Epiderm), niryāsa (exudation) Śakara (mesoderm) kināta (endoderm), ābhyantara kāstha (heartwood) and majjā[25] (pith)

Use of plants in various diseases was based on experience and observation of the effects of plants particularly on animals like boars, mongoose, snakes and cows [26] Another basis was doctrine of signature such as such of *haridrā* in jaundice, *Lākṣā* in haemorrhage and *asiknī* in *palita* etc

Ṛgveda is the oldest document of Indian culture and the plants mentioned therein are undoubtedly the oldest ones Gradually the number of plants increased which are found in later vedic texts Here mainly the plants mentioned in *samhitās, Brāhmanas* and *upaniṣads* are taken up because the number of *kalpasūtras* goes up considerably and their dates too are quite later

Ajaśṛṅgī — It is a shrubby or weak plant It emits intense odour which is repellant to *Rakṣas.* Thus it is one of the potent drugs *Arātkī*[27] and *Tīṣṇaśṛṅgī* (4 37 6) are its synonyms. Explaining the word '*Tīksnaśṛṅgī*' Sáyana says that its fruits have intense odour and are horn-like pointed [28]

Ajaśṛṅgī is a synonym of *Karkataśṛṅgī* and *Meṣaśṛṅgī* in later *Nighantus* GP on this basis Weber takes Prosopis spicigera or Mimusa suma All these plants are trees except *Gymnema sylvestre* which is a weak plant But none of these has any odour whereas *Ajaśṛṅgī* should have intense one Hence claims of none of the above plants for *Ajaśṛṅgī* stands

It seems that *Ajaśṛṅgī* may be the plant which is known as *Ajagandhā* in later literature, replacing '*śṛṅgī*' with '*gandha*' which is its main characteristic It may be *Gynandropsis pentaphylla* having 2-4 in long horn-like capsules and with a typical odour.

As regards *Ajaśṛṅgī* and *Mesaśṛṅgī* of later literature, these might have derived from *Visāṇakā* (*AVS* 6 44 1-3) (see *Visānakā*)

Aṇu — It is mentioned as one of the cultivated grains [30] The word '*anu*' signifies its small seeds

Atasī — The word comes in *RV* (8 3 13) but in the sense of 'ever-moving' (*Satata-gāmini*) and not in that of a plant It is only in the later age that it began to denote the linseed plants [31] '*Umā*' is one of its synonyms used in *KSS* (33 17)

Adhyanādā — It is met first in *SB* (13 8 1 6) Sayana interprets it as 'having fruits in a bunch' Dārila in his *comm* on *KSS* has interpreted it as 'parnaphalā' It is said as '*parnaphalinī*' in comms [32] on *Sank Gr* (1 19 1) what is '*parnaphalā*' is not clear In later texts '(*kapi*) *romaphalā*' is a synonym for *kapikacchū*

Looking to its name (*aṇḍa*) and shape (testicle-like) of its seeds and also use in *puṃsavana* and *garbhādhāna, kākānda* (*Mucuna monosperma*) should be taken by *adhyaṇḍā* GP takes *M pruriens* but at the same time mentions two more plants — *Phyllanthus urinaria* and *phyllanthus niruri* which are irrelevant here

Aparājitā — (AVP. 20 20 6).

Ap describes it as destroyer of *rakṣas* and promoter of strength (18 1 14,17)

Apāmārga — It is not found in *RV* It destroys *Ksetriya,* worms, poisons and calculi and is used to avert sorcery It is a reputed remedy for *kṣetriya roga* and improves digestive fire and breaks[33] (lumps) The word '*pratīcīnaphala*' (*AVS.* 7 65 1) is symbolic which indicates that it sends back the evil deeds to the invader [34] This seems to be the source of the word '*Pratyak-puṣpā*' a synonym of *Apāmārga* in later texts The *Apāmārga-tandula* of *SB* (5.2 4 20) made the basis of the title of a chapter (*Apāmārga-taṇḍulīya* in *CS. (SU* 2)

Abhiroruda (AVS 7 39 (38). 1) — According to Sáyana, this hymn relates to the drug *sauvarcala* which brings one under control (*Vaṣīkaraṇa*)[35] The word '*abhiroruda*' has been interpreted differently but, in my opinion, it reminds of a plant '*rudantī*' of the later texts which might have originated from it

Aratu — In *RV.* (8 46 27) it means a king In its *khila* portion[36] (5 15 14) it comes with some plants and by association, it may be a plant

Macdonell and Keith have identified it as (*Colosanthus indica* from which axis of chariot was made [37] GP takes it as synonym of *Arātki* and identifies as *Prosopis specigera* or *Acacia suma* [38]

In my opinion, the word '*araṭu*' is precursor of 'aralu' which is found in later texts *KSS* (43 1,2) and Sāyana (int on *AVS* 3 9) mention it It is *ailanthus* excelse Roxb but GP taking *aratu* and *aralu* as different plants identifies the latter as *oroxylum indicum Vent* [39] Even this identification of *aralu* is not correct because *Oroxylum indicum Vent* is *śyonāka* and not aralu

Arundhatī — It is *lākṣā* (lac) as explicitly mentioned in *AVS* (5 5 7) It is a healing and union-promoting drug Lac is obtained from various trees like *palāśa Aśvattha* etc It also helps recovery of milk in cows which is stopped due to injury or disease. It is also used to cure *Yaksma* in men [40] *KSS* (28 5,14) prescribes intake of milk boiled with *Lākṣā* and sprinking of wound with lac water The former use of lac is still continuing Pānini (4 2 2) has mentioned it as a dye

Because of the epithets '*hiranyavarnā*' and '*Śūryavarna*' (*AVS* 5 5 6-7), Filliozat says that '*Arundhatī*' can be applied to resins and not to the red lac [41] In fact, these word denoted only its lustre, the red colour is evident by the word '*rohinī* and '*aśvasyāsraḥ*'.

GP taking it as *sahadevī* identifies it as *Sida cordifolia*[42] or *Sida rhombifolia* which, in fact, is *balā*. He is presumably led away along with Sāyana by the word '*saha devīḥ*' which can't be '*Sahadevī*' but would only men 'with *goddesses*'

Macdonell and Keith take *Arundhatī* as a plant (climber) of golden colour and with hairy stem also named as *Śilācī* which spreads on big trees *Lākṣā* appears to be a product of it.[43]

Arka — The word '*arka*' indicates the honour (arc = worship) given to the plant which has come down to the present times uninterruptedly It is said as *agni* or *āditya*[44] which suggests its fiery nature The name '*arka*' itself denotes sun It is also used as aphrodisiac.[45] *Arka* is also said as '*anna*' (food) because of its appetising and digestive functions [46] *SB* (10.3 4 2-5) symbolises it as *Purusa* and has described different parts simulating man's different organs These parts are *parṇa, puspa, kośī, samudga, dhānā, aṣṭhīlā* and *mūla*. This shows the stage of botanical study at that time According to *MK* and GP it is *Calotropis gigantea (Ved Ind* I-36), Med Pl 657)

Arjuna — In *RV*. (1.222 5 etc) this word means 'white' but in later samhitās and other texts it denotes a small herb also known as '*Phālguna*' and used as a substitute *soma*. In *Kāṭhaka-samhitā* (34 3), it is mentioned as of two types — *Lohitatūla* (having red spikes) and *Babhrutūla*[47] (with grey spikes) *Arjuna* is the essence of herbs[48] and is originated from the flowers of *soma* [49] Somewhere Sāyana has alternatively interpreted it as *Arjuna* tree *(AVS* 4 37.5) but it is not relevant

Alābu — It is mentioned in *AV*. and later texts [50] In *Maitrāyaṇī Sam* (4 2 13) it is read as '*alāpu*'. It is *Lageneria vulgaris (Ved ind* I-38, Med pl 656)

Avakā — It is interpreted as *śaivāla* by Sāyana (*SB* 8 3 2 5-6) It is an aquatic plant (*AVS* 8 7 9 — *avakolvā udakātmānah osadhayah*) It is mentioned in *Samhitās, Brāhmanas* and *Sūtras* [51] It is *Blyxa octandra* according ot *MK* (*Ved Ind* I-3) and *B oryzetorum* according to GP (*Med Pl* 648)

Aśmagandhā[52] — It seems to be *aśvagandhā* [53]

Aśvattha — Its mythological origin is described differently in Vedic text [54] In *Aitareya Brāhmana* (7 32,8 16), it is said as 'king of trees' In *RV* (10 97 5), it is mentioned along with *parna* In *RV* (1 135 8), *aśvattha* is interpreted as an epithet of *Soma*, meaning 'pervading mountains etc ' (*Parvatādivyāptipradeśe sthitam-Sāyaṇa*) In *RV* 6 47 24, it is the name of a king The fruit of *aśvattha* is called '*pippala*' (*RV* 1 164 20,72) Sāyana interprets '*pippala*' as 'pālaka phala'[55] (sustaining fruit) It is one of the oldest plants of India and is regarded as *yajñavrksa*[56] (Sacrificial tree) This plant has come down to the present times and is mentioned with reverence extensively in texts [57]

Aśvavāra (la)[58] — It is interpreted as *Kāśa* *Kāśa* comes in *Tait Ar* (6 9 1) It is *Saccharum spontaneum* [59]

Aśvāvatī — It is one of the four herbs mentioned in *oṣadhisūkta* (*RV.* 10.97.7)[60]. It seems to be some aphrodisiac drug and may be a synonym of *aśvagandhā* (see *Aśmagandhā*)

Asiknī — In *RV.* (8.20 25 etc) '*asiknī*' is the name of a river (*Chenab*). It is one of the four colouring agents used in leucoderma and for blackening hairs (*AVS.* 1 23 1,3). Sāyana interprets it as *nīla* or *nilinī.*[61]

Āṇḍīka — It is one of the aquatic flowering plants (*AVS.* 4.34 5, 5 17 16). Sāyaṇa interprets '*āṇḍīka*' as 'grown from egg-shaped tuber'[62] while MK take it as an edible plant apparently with egg-shaped fruits or leaves akin to lotus.[63] It may be some *Nymphoea sp* GP identifies it with *N. alba.*[64] TP[64a] takes '*āṇḍīka*' as the bulbous (egg-shaped) container of seed

Ādāra — The word comes in *RV* (1 46 7) Sāyaṇa interprets it as epithet of *soma* meaning that which awakens consciousness [65] It also means 'that which invokes reverence (*drñ ādāre, ādārayati ityādārah* — Sāyaṇa) but there also it may indicate a plant which exceeds or is equal to *soma* (*Somasya dhṛṣṇuyā*)

In *Brāhmana* and other literature it is explicitly used as a substitute of soma It had ample juice which came out gushingly It was also known as '*Pūtīka*' because it had frangrance [66] Sāyaṇa has identified it as a grass[67], a creeper[68] and a twinner with latex [69] *Pūtīka* is somewhere read also as '*ūtīka* [70] In later literature *Pūtīka* and *ādāra* were taken as different plants [71] *Pūtīka* was one of the plants used for curdling milk[72] and matting [73] It was also used internally as diuretic [74]

GP identifies *ādāra* as *Zingiber officinale* which is commonly known as *śuṇṭhī* and *pūtīka,* taking differently, as *caesalpinia bonducella* but it is not known what are the arguments on which his decision is based

It seems to be some grass of *Cymbopogon sp*

Āmalaka — It is mentioned in *Ch Up* (7 3 1) '*Amalā*' in *Jaim. Up Br.* (1 3 8 6) and *Jaim Up* (1 12 4 6) is also the same

Āmba[75] — Sayana calls it as a type of paddy Possibly *nāmba*[76] is also the same

Āmra[77] —

*Āvayu*7[8] — Sāyana has taken it as *sarsapa* (mustard) He has mentioned the use of its stem, leaves and oil Its use is prescribed in eye disease [79] *Baja* and *piṅga*[80] are its two-white and brown-types Both are employed in Sīmantakarma [81] *Sarsapa* is reported as destroyer of *raksas* and *durnāma*[82] (skin diseases) GP takes *Brassica juncea* and *B alba* MK say — "The mustard may have been meant, but the sense is quite uncertain "[83]

Āsurī[84] — Sāyana interprets it as 'woman formed by *asuric* witchcraft or the witchcraft itself[85], but Ath Anu. relates this hymn to a plant *āsurī*[86] Its other names there are *rājikā, lokeśī, sureśvarī* and *vrddhaputrī* Its use is prescribed in *kilāsa, kustha* and other skin disorders

Thus *āsurī* can be equated with *rājikā* which is a common plant in India

Ikṣu[87] —

Iṭa[88] — In *RV.* (10 171.1), it is the name of a king

Ucchuṣmā — In *KSS.* (40 14) Keśava takes it as *Kapikacchu* [89] Sāyana in *RV* (10.97 8) interprets this word, on that basis it may mean strength-promoting.

Udumbara — *RV* (10 14 12) reads '*udumbala*' which was modified later as '*udumbara*' but preserving the original sense of energy-providing [90] It had an important position among the sacrificial items In *AVS* (19 31.1-14), there is description of *udumbaramani*. '*Bhadra*' (*AVS* 5 5 5, AVP 20 3 2) is its synonym (In *AVS.* 20 136 15 '*bhadra* is adjective of *bilva* and *udumbara*) GP identifies it as *Ficus glomerata.*[91]

Udojasa — It is one of the ojas-promoting *rasayana* drug [92]

Unnayantī[93] —

Upavāka (kā)[94] — Mostly it has been interpreted as *indrayava* (seeds of *Wrightia antidysenterica* or *W. tinctoria)*[95] but it is not taken as food substance like rice and wheat Moreover, SB (12 7 1 3) has related it to '*slesmā*' (sticky material) It was both wild and cultivated and strength-promoting [96] KSS (8 20) includes *upavāka* in *miśradhānya* Here Dārila explains it as '*abhiyava*' common in Saurāstra

Urvāruka[97] — GP gives its botanical names as *Cucumis melo* and *C sativus* [98]

Ulapa — Sāyana takes it in general sense of grass (*trnajāta*) but MK take a species of grass (*Ved.* Ind I-101) and GP gives its botanical name as *Imperata arundinacea* (*Ved Pl* 664) which, in fact, is *darbha* He is perhaps led away by the confusion from the name '*ulapa*' as *darbha* is called in certain region as '*ulu*' *Because of this, he is also confused in the issue of darbha* and *kuśa* which he has taken as synonymous (see *darbha* and *kuśa*)

Uśānā — It seems to be some hilly plant [99] GP identifies it as *Piper longum* and *P. Peepuloides* perhaps on the confusion that it is mentioned as '*ūsanā*' in later texts [100] MK say that it is a plant from which *soma* was prepared [101]

Ūrjayanti[102] — This seems to be some strength-promoting plant I think, it may be the old name of 'balā'[103] which has got the above action MK do not mention it as a plant[104] though it is one of the four principal herbs

Eraṇḍa — In *Sank. Ar.* (12 8), amulet of *eranda* is described [105] It is *Ricinus communis.*[106]

Auksagandhi — In *AVS.* (4 37.3), it is mentioned with *guggulu* etc. which are used as fragrant oblations [107]

Kaṅkatadantī — This may be *atibalā* known commonly as '*Kaṅkatikā*' because of its comb-shaped fruit. In Vedic texts, 'Kaṅkata' means 'little poison'[108], on this basis, this plant may have antipoison property

Kanaknaka — It is a poisonous plant.[109] According to MK, it denotesd a poison or is an adjective qualifying *Kāndāviṣa,* a species of poison [110] GP has left this word TP takes it in the sense of 'glistening' and refers to the poison (of a serpent) that is in the fire or in the sun.[111] It may be *Dhattura* which is commonly known in later age as '*Kanaka*' because of its golden seeds

Kabrū — It has black fruits and is a remedy for *balāsa.*[112]

Karañja — In *RV* (1 53 8, 10 48 8) it is the name of an *asura* Later on in *Kalpasūtras,* it became the name of a tree which is popular for its tooth-brush.[113] It is *Pongamia pinnata.*[114]

Karīra — It is related to rains and as such *Kārīrī* sacrifice is done to invoke rains [115] Sāyana says that these are sweet fruits found in northern region Flour of parched fruits (*Saktu*) was used in sacrifices In *KSS* (29 20), its root and stem are used in worms. It is *Capparis aphylla* [116] Sāyana says that these fruits are common in *Uttarāpatha*[117] (Northern Himalayan region) In fact, it is a plant growing in arid zone like Rajasthan, Gujarat etc

Karkandhu — In *RV* (1 112 6), it is the name of a sage In *Yajurveda,* it denotes red fruits of a plant [118] Its three types — *kuvala* (*Kavala, Kvala* or *kola*), *badara* and *Karkandhu* are mentioned, successively being smaller in size [119] Its *saktu* was used in sacrifices and sweet fruits were eaten [120] Plant was cultivated as well as grew wild [121] It has been said to possess unctuousness [122] The fruits (probably sour) were used for curdling milk [123] Amulet of *badara* (*badara-mani*) is used in *snātaka-karma* [124]

Kalmali — Its amulet is mentioned (*AVS* 15 2 1 (5), 13,19,25) '*Kalmali*' is translated as 'splendour of stars' (Griffith, II 186) TP (61-62) suggests its meaning as 'Thunderbolt' There is the form '*Śarmari*' also (*AVS* 20 135 11) Looking to the alternance of K and S (see TP's note on 60), there is also possibility of '*Kalmali*' being '*Śalmali*' (see *Śalmali*)

Kākambīra (RV 6 48 17) — Sāyana explains it as a tree on which crows live (*Kākānām bhartāram vanaspatim vrksam*) but it may denote some particular tree also [125]

Kāndāvisa[126] — It seems to be some tuber and poisonous plant possibly an *Aconite sp* MK mention it as some kind of poison (*Ved Ind* I 148) GP has left it TP (59) takes it as 'root-poison'

Kārṣmarya — It is one of the sacrificial trees [127] It is *Gmelina arborea (Ved. Ind.* I-151; Med. Pl. 652).

Kāśa — (See *aśwavāra*).

Kumuda[128] — According to TP (46), Śālūka is its root, mrnāla flower-stalk and aṇḍīka container of seeds

Kuśa — 'Kuśa', to my mind, is the modified and abridged form of 'Kuśara' (RV 1.191.3), which is one of the grasses mentioned there. This is a sacred grass having leaves with sharply pointed end. It was used in various ways.[129]

Kuṣṭha — It is extensively described in AV.[130] It is said to grow in the third heaven and is found with soma. 'Viśvabheṣaja' is its epithet denoting its use in various disorders like head-diseases, eye diseases, skin diseases particularly Kuṣṭha and takman.[131] It is one of the aromatic drugs.[132] Its identification as costus speciousus is wrong. It is Saussurea lappa.

Kṛ (a) muka — It is a tree having strong heartwood and bow was made of its branches.[133] Sacrificial posts were made and oblations were offered in fire with its wood-pieces.[134] 'Apaskambha' (AVS. 4 6.4) is interpreted as 'Kramuka tree' by Sāyaṇa. Bloomfield does not agree to it (HA.375). GP has not touched it

Kṛṣṇala[135] — Probably this is guñjā.

Kṛṣṇā — It is used to recover pigmentation in kilāsa and palita (AVS 1 23 1, AVP. 1.16.1), Sāyana interprets it as indravāruṇī By Kesava on KSS (26 22), the method of its application in Kustha is described Bhṛṅgarājā, haridrā, indravāruṇī, nīlikā and puṣpā-these five drugs are pounded and their paste applied on the spot with incantation. Prior to this, the spot has to be rubbed with dry cow-dung till it bleeds.

K (i) yāmbū — Sāyaṇa on *RV.* (10 16 13) says that it means aquatic plants like lotus etc. and on *AVS.* (18.3.6) as 'a herb' (see also *Ved. Ind* I-157)

Klībakaraṇī[136] — It is a herb which makes man impotent In one of the hymns, there is clear description of testicles and seminal ducts.[137]

Kṣumpa[138] — It is mentioned in *RV* (1 84 8) and is interpreted as '*Ahicchatraka*'[139] (mushroom)

Kṣetriyanāśinī Vīrut[140] — It is a herb destroying the disease known as *Kṣetriya*

Khadira — It is one of the sacrificial trees 'Vibādha' is one of its synonyms Its heartwood is very strong of which parts of chariot, sacrificial posts and other appliances were made It is a thorny tree in which lac thrives [141] Patañjali differentiating between *Khadira* and *barbura* says that the (bark of the) former is flaky [142]

Kharjūra[143] — *Saktu* prepared of its fruits are prescribed in sacrifices

Khalakula[144] — Śaṅkara has interpreted it as *kulattha.*

Khalatulaparṇī[145] —

Khalva[146] — Śaṅkara and Sāyaṇa take it as *niṣpāva* while Mahidhara takes *caṇaka.* Weber takes *Phaseolus* GP has aggregated all these views [147]

Garmut — Its grains are oval which were used in sacrifice to prepare *caru.*[148] It is interpreted as wild bean [149] GP has followed it.[150]

Gavedhuka — It is a cereal by which oblations were made particularly for *Rudra.* Gruel and parched flour were also made [151]

Gulgulu — It is a fragrant gum-resin obtained from the plant. It grew mostly in Sindh and was also procured through sea (from outside) It was a remedy (*bheṣaja*) for various disorders and was also used as incense It appeared like a fleshy mass of golden colour.[152] It was also used in veterinary medicine.[153]

Godhūma[154] — Sāyana comments that it is preferred to barley and paddy. In sacrifices, its powder and parched flour were used Sweet cakes (*apūpa*) were also made.

Caṇaka[155] —

Citti — It derstroys bad dreams. Its water is sprinkled in abdominal enlargement and *rakṣograha* [156]

Cīpudru — It is remedy for *vidradha, balāsa, lohita* (haemorrhage), *visarpa* and *hṛdroga* [157] Sāyana says that it is a tree (*cīpudruh etatsanjñako drumaviśesah*)

Jaṅgida — *Jaṅgida* is found only in *AV.*[158] and is typical plant of Atharvanic tradition. It is prescribed in *takman, balāsa, jambha,* etc. *Jaṅgida* along with *śana* is said as protective against *viṣkandha* The former is cultivated while the latter is wild (*AVP* 2 4 5) Sāyana has mentioned it as a tree (*Vrksa*) common in varanasi but at the other place he says it as an *Osadhi* (herb) common in northern region Evidently these two seem to be different *Dārila* (on *KSS* 42 23) interprets it as *arjuna* Presumably on this basis mostly it is accepted as *Terminalia arjuna* [159] Surprisingly the word '*jaṅgida*' does not come in later literature

Jambīra (la)[160] —

Jartila[161] — It is taken as wild *sesamum.*[162]

Jivantī — In *RV.* (5.78 9) the word is used as epithet Sāyana interpreting the verse (*A VS*) 8 2 6 says that these are epithets for *pāthā* or may be independent plants Keśava (on *KSS.* 31 28) definitely mentions the fruit of the plant *jivantī*

Talāśā — It is regarded as the best one among the trees [163] Dārila's interpretation[164] is not clear. Keśava takes it as *vetasa* GP takes *Flacourtia cataphracta.*[165] It may be *Tālīśa* which is accepted now-a-days as *Abies Webbiana.*

Tila — It is one of the winter crops and is both wild and cultivated. *Br Up.* (6.3.13) enumerates it among ten cultivated grains (*grāmya dhānya*). *AP* (9.1 1-2) describes it as of three types-white, black and brown. Keśava (on *KSS* 31 28) mentions the intake of black sesamum for growth and strenthening of hairs It is not in RV but is extensively found in other Vedas [166]

Tilvaka — Its wood is firm like thunderbolt It is used for making sacrificial posts.[167] In *Āgniveśya Grhyasūtra* (3 5 5) there is 'Tilvaka'

As somewhere tilvaka is synonymous with *lodhra*, it has been identified as *Symplocos recemosus,*[168] but, in fact, tilvaka and lodhra are two different plants In Buddhist literature it has been mentioned to have red flowers like those of *bandhujīvaka* [169]

Trstā (Trstikā) — *Visā* and *Visātakī* are its synonyms [170] In *AVP* (20 1 7) it is mentioned as repelling insects and rats by its (intense) odour [171] In *KSS* (36 38), it is said as '*bānāparnī*' which *Dārila* says as *Śarapunkhā* According to Sāyana, it produces burning sensation [172]

Trāyamāna — It destroys snake-poisoning Sāyana takes it as epithet or a separate plant [173] *Trāyamāna* is now identified as *Gentiana kurroo Royle*

Darbha — It is mentioned among grasses in *RV* (1 191 3) [174] It has numerous branching roots (*bhūrimūla*) which bind the soil It is also *śatakānda* and *sahasraparna* It is known as 'manyuśamana'[175] becasue of sedative properties It is of watery nature (*Jalāsabhesaja*) and as such is used (as diuretic) in ascites etc and also as haemostatic *Darbha* is mentioned among five important plants [176] GP has confused it wtih *Kuśa* (Ved Pl 647)

Dasavrksa — It is indicated in seizure of joints [176a] *AP* (32 1 7) mentions it in *Takmanāśana gana* Keśava (on *KSS* 27 5) takes '*daśavrksa*' as *Palāsa* etc ten plants[177] which is followed by Sāyana [177a] Roth takes it as a single tree [178]

Dūrvā — It is a very common plant since early times and is mentioned in *RV* (10 134 5, 142 8) Perhaps because of this it is called as herb born of gods' (*Devajātā vīrut*) It spreads on the ground (*tantavah*) and has flowers (*puspinī*) Its roots emerging from joints establish it in the earth as *Kṣatriya* ruler does to a nation *Dūrvā* is the life-sap of herbs and as such is the chief among them It is '*śapathayopanī*'

(alleviator of sins-diseases) Moreover, it is extensively used in rites and sacrifices [179] '*Śāt*' (*Jam Br* 1 354) may be its synonym.

Devamuni — Its root is used to puncture the apacit glands [180]

Dhava — It is mentioned in *A V.* with *plaksa, aśvattha* etc and is a host plant of lac [181]

Naḍa — It is an aquatic plant and was used to make mats etc It was also used as a remedy against diseases It grows in rainy season Sāyana has interpreted it as a grass mostly found in ponds [182]

Nalada (dī) **— It is a fragrant herb It is one of the five substances meant for oblations in fire (*AVS* 4 37 3)** [184]

Nitatnī[185] **— It strengthens the hairs. Sāyaṇa explains it, on the basis of name, as herb spreading downwards.**

Nīvārā — It is one of the grains.[186]

Nyagrodha — It is also known as *vata* (*A VS.* 20 135 3) **Hanging roots establish the plant firmly in the ground and spreading branches provide a thick shade That is why it has been said as *Ksatriya* among the plants [187] It is widely used in sacrifices and domestic rites. Patañjali gives its description by saying that the plant having latex, hanging roots and thick broad leaves is *nyagrodha* [188] Pischel thinks that hints for the existence of plant are contained in RV. (1 24 7) though not mentioned explicitly.**[189]

Nyastikā[190]— Sāyana has taken it as '*Śankhaupspī* [191] **In *KSS* (10 16) Keśava, by *Śuklapuspā,* takes *śaṅkhapuspī* in the context of *medhājanana* In later texts also, *śaṅkhapuṣpī* is chief among the *medhya* drugs** [192]

GP has identified it as *Andropogon aciculatus* and has equated it with *caṇḍā* but *caṇḍā* is *corakabheda (Angelica sp*) and not *Andropogon sp.* This confusion rests originally with MK who identify it as '*śaṅkhapuṣpī* but give it an incorrect botanical name *Śaṅkhapuspī,* nowadays, is accepted as *Convolvulus pluricaulis* **At least,** nowhere *Andropogon* is taken as *śaṅkhapuspī*

Padma[193] — It is lotus *Pundarīka* denotes it while variety [194] Puskara[195] is also taken as lotus Some take blue lily by *Puskara* [196] '*Kamala*' is a general term for lotus In *A VS* (8 6 9), it is in the sense of uterine cervix (*Kamalam garbhadvāram* — Sāyana) [197]

Paruṣavāra — This is an anti-poison plant [198] '*Parusāhva*'[199] may also be the same There is no any comment on *Parusavāra* but *Parusāhva* is interpreted by ***Dārila*** as *Palāsa* tree with nodes Griffith takes it as a kind of reed (*HA* II 15, also *Ved. Ind* II, 499)

In my opinion, this may be the pecursor of the word '*Parusaka*' which is common at present.

Parṇa — It is synonymous with *Palāśa*. In *RV*. (10 97 5) it is read with *Aśvattha* and in *AV*. with *Aśvattha, nyagrodha* etc (*AVS*. 5 5 5) [200] It is one of the important sacrificial trees It releases a reddish exudation from its bark It is used as a *panacea* (*Sarvarogabhaiṣajya*).[201] '*Parṇa*', though like '*Palāsa*', denotes leaves is earlier than the latter [202] *Kiṃśuka* (*RV*. 10.85 20) denotes flowers of *palāśa* as GP and MK think[203] but according to sayana it meant tree of *palāśa* which bridal car was made of.[204]

Pākadūrvā — *RV* (10 16 13) mentions it Sāyana has interpreted it as '*paripakva* (ripened) *dūrvā*'. *AVS* (18 3 6) reads it '*Śāndadūrvā*'. Sāyana interpreting this says that it is an aquatic plant having oval root and long stem and is also known as '*brhaddūrvā*' [205]

Pātā — It is described in *RV* (10 145 1-7)[206]. It has been said as *Uttānaparnā* and *vātaplavā* Sāyaṇa takes it as *pāṭhā* and so GP

Pippalī — It is mentioned as *rasāyana* and remedy for *ksipta, atividdha* and *vātīkṛta*.[207]

Pītudāru[208] — The tree was used in making sacrificial posts Its wood is fragrant and inflammable. Sāyaṇa takes it as a type of udumbara while others interpret it as *devadāru* or *Khadira*.

Pīlā — It is mentioned with *gulgulu* etc [209] It is a fragrant plant used as incense

Pīlu[210] — It destroys *raksas* and is used as amulet It is wrongly identified as *Careya arborea*[211] which is *Kumbhī (ka)*

Puskalā[212] — It helps delivery of foetus

Puṣpā[213] — Keśava has mentioned its use as paste along with *Bhrṅgarāja* etc in *vitiligo*.

Pūtadru — Sacrificial posts were made of the wood of this tree It is said as raksoghna as well as amīvacātana (AVS. 8 2.28) In AVP (19 50 4-6), it is mentioned as viśvabhesaja and destroyer of bad dreams [214] It is one of the Śānta Vrksas and its amulet was used [215]

Prśniparnī[216] — Sāyana has interpreted it as 'Citraparnī osadhi' (a plant having variegated leavés) It destroys raksas, skin diseases and nourishes foetus It is also used as paste in kustha etc [217]

Prsātaka — It is mentioned with alābu, aśvattha etc (AVS 20.135 3) [218]

Praprotha — It is a plant used as substitute of soma.[219]

Pramandanī — It is mentioned with aromatic plants like gulgulu etc [220] In KSS. (25.11) its intake is prescribed in retention of urine Here Dārila interprets it as induka.[221]

Priyaṅgu — It is one of the cereals which was used in making oblations in sacrifices.[222] KSS (32.2) prescribes its intake with milk for children suffering from jambha (tetanus). It is also used in Puṃsavana etc. the word 'Priyaṅgu' denotes both cereal and drug (the former seems to be earlier). GP has given botanical names of both.[223]

Plakṣa — It is one of the laticiferous plants and is grouped with nyagrodha etc.[224]

Balāsanāśinī — This plant is also called as 'balāśbhesaja' [225]

Balvaja — It is a grass used in making ropes and mats [226] It is wrongly identified as Eleusine indica[227] which is used for grains or fodder.

Bāhlikā[228] —

Bibhīdaka — It was used as dice. It also produced narcosis (*madayantī*)[229] (the seed krnel is narcotic) It is so named because of its *bhedana* property-breakig off the faecal mass [230]

Bilva — It is one of the trees useful for sacrificial post [231] Its fruit-pulp is yellow and is eaten.[232] *Bilva-mani* isd prescribed for various purposes [233] It is one of the plants of *śānta* group [234]

Bhaṅga (ā) — '*Bhaṅga*' in *RV* (9 61.13) is interpreted by Sāyana as 'destroyer of enemies'[235] and thus is an epithet for *Soma* [236] In *AVS* (11 6 15) it is clearly a herb mentioned as one of the five kings of herbs (*pañca rajyāni vīrudhām*) Here Sāyana has interpreted it as '*Śana*' (hemp) In *KSS*, all the references[237] relate to its use as fibre In *Kān Sam* (7 1 3)[238], '*bhaṅgena*' has been interptreted by Sāyana as '*abhisavāmardena*' which may have some slight indication to its intoxicating property Pānini (6 2 4) and then Kātyāyana in his *varttika* on 5 2 29 mention *Bhaṅgā* which also means fibre Because of the kingly status in *AV* and copious reference in KSS, it is clear that *bhaṅgā* was very popular in Atharvanic tradition [239]

Bhūrja — Sacrificial laddels were made of its wood.[240]

Mañjiṣṭhā — It was source of the red dye [241]

Maṇḍūkī[242] — It is ***mandūkaparṇī***

Madugha — It is a sweet herb.[243] It nourishes foetus Its amulet is prescribed in marriage ceremony Dārila (*KSS.* 38.17)[244] interprets it *jyeṣthīmadhuka*. It is given

internally in cases of animal poisoning [245] '*Madugha*' is changed, later on, to '*madhuka*'

Masūra — It is listed among ten cultivated cereals [246]

Mahārajana[247] — It was an important source of dye. In the context of Pāṇini's sūtra on dye (4 2 2), Kātyāyana adds in his *vārttika haridrā* and *mahārajana* ' Now it is commonly known as *Kusumbha*

Māṣa[248] — It is one of the cereals regarded as unholy and non-sacrificial It is testicle-shaped and as such is used symbolically in *puṃsavana* alongwith barley which represents *phallus (Jaim. Gr* 1 5) This ripens in hemanta (*Tait Sam.* 7 2 10 2). In *KSS* gruel and paste of *māsa* is prescribed [249]

Muñja — It is one of the oldest known grasses [250] It was the source of strong fibre and thus was used for making girdles as well as seats and matting. It was useful in retention of urine and abortion It alleviates *roga* (internal diseases) as well as *āsrāva*[251] (accidental injuries) (See *Śara*)

Mudga — It is one of the leguminous crops used as pulse [252] It ripened in sixty days and perished thereafter.[253]

Mulālī[254] — It is an aquatic plant Sāyana takes it as *Mrnālī* MK take it as some part of edible lotus [255] TP (46) takes as the root of the lotus

Yava — It is the oldest cereal referred to extensively in *RV* [256] It is one of the five kingly herbs and is said, along with *vrihi*, remedy divine and immortal and is enumerated in seven honeys KSS has included it in *Śānta gana*. *Yava* is given in retention of urine *Yava-mani* is under *Takmanāśana gana* and *sarvabhaisajya* Many dietary preparations are made of barely *Yava* is indispensable almost in all the *Saṃskāras*

Yavasa — It is a barley-like herb growing wildly [257]

Yavāsa — It dries up in rainy season [258]

Rajanī — It is used in colouring the spots effects by kilāsa and palitā [259] Dārila has taken it as methikā while Keśava takes it as haridrā The latter seems to be more reasonable In later texts too, 'rajanī' is a synonym of haridrā Sam Br (2 7 9) says that one attains sharp memory by taking haridrā powder with ghee and honey The patient of hrdroga and kāmalā is given haridraudana (rice cooked with haridrā) to eat and the same is anointed on the body [260] In snake-poisoning it is taken with ghee

Rajjudāla — Its wood is used to make sacrificial post [261] It is slimy, its fruit is like penis and slimy substance like semen [262] Nīcudāra (Tand Br 21 4 13) may be its synonym It is interpreted by commentators as ślesmātaka but it seems to be a different

plant having fruits like penis with slimy exudation MK have identified it as Cordia myxa or C latifolia Accordingly, GP has taken it as C. obliqua [263]

Rāmā — It is one of the herbs used in treatment of *kilāsa* and *palita* [264] It is interpreted as Bhrngarāja by Sāyana

Rohitaka — It is used for making sacrificial post.[265]

Lingā — It is given to drink in snake-poisoning [266]

Libujā[267] — It is a climber

Vadhaka[268] — It may be *āragvadha*

Vandanā[269] — Sāyana takes it as a climber

Vaṃśa[270] — It was used for thatching the roof of the houses and making various articles. It is also known as *Venu* [271] Its fruits are barley-shaped and are called '*Venuyava*' which mature in spring

Varana — It is a tree used as *paridhi* (fencing) and for making several appliances. It has got remarkable medicinal properties too Its amulet was worn in *Rājayaksma*. This is read among the *śānta vrkṣas* [272]

Vāsā — It is read among *Śānta Vrkṣas*.[273] Dārila mentions it as *Vṛṣa* and *āṭarūṣaka*. '*Vṛṣa*' is its synonym [274]

Vikankata — It is not found in RV though the word '*Kankata*' is mentioned *RV* 1 192 1) meaning with little poison *Vikankata* is one of the sacrificial trees They are used fresh [275]

Visā[276] — This has also come in *Tait Br* (3 7 13 14) where Sāyana has interpreted as 'pervading' This is also said as '*Visātakī*'

Visānakā — It destroys *vātīkrta* and also raksas and worms [277] GP takes it as *Gymnema sylvestre* 6[278] *Bloomfield translate it as simply 'horn'* [279]

Viri (a) na — *RV* (1 91 3) mentions it among grasses Sāyana has mentioned the use of *Vīranatūla*[280] (tuft of the grass) In *KSS*, its several uses are prescribed [281]

Vetasa[282] — It is mostly found in aquatic surrounding [283] It is one of the *Śānta Vrkṣas* [284]

Vyalkaśā[285] — Sāyana interprets it 'profusely branching' (*vividhaśākhā*) as an epithet of *pākadūrvā* but MK take it as a herb [286]

Vrīhi — *Vrīhi* together with *yava* is called as remedy like nectar Several preparations of *vrīhi* are used It is mentioned in *Śānta* group and *miśra dhānyas* [287]

Śana — This is a fibre-plant It was used as a remedy against *viskandha* It was found wild (or was cultivated too) [288] This alongwith linseed, was recognised later on as '*dhānya*' [289]

Śatavāra[290] — It has been given the epithets of *hiranyaśrnga* and *rsabha* — It destroys many diseases particularly *durnāma (durnāmacātana)*

Śaphaka[291] — It is an aquatic plant. GP takes it as *Śṛṅgāṭaka*. TP (46) takes it as horn-shaped container of lotus seeds

Śamakā — It is mentioned in *AVP* (19.38 1,3). *KSS* (8.16) has listed it under *Śānta* group.

Śamī[292] — This also is in the *Śānta* group It has many uses Fire was manifested by rubbing the wood of *Aśvattha* on that of *Śamī*. On its application, hairs fall down.

Śara — *RV*. (1 191.3) mentioned it among grasses [293] Sāyana explains it as a grass like bamboo-stick having hole within It is diuretic and relieves retention of urine The plant was used for making girdle and matting

Śalmali — the bridal car was decorated with its flowers (*RV* 10`85`20).[294] Flowers were named as '*Simbala*' (*RV* 3.53.22). Perhaps the plant also was meant by it (*KSS*. 8 15) (See *Kalmali*).

Śālūka[295] — Sāyaṇa has interpreted it as *Utpalakanda* (tuber of water lily) (also TP. 46).

Śimśapā[296] — Wheels of chariot were made of its wood It is one of the *Śānta Vṛkṣas*.

Śigru — In *RV* (7 18 19) it denotes a geographical region but in later texts it is a plant. KSS prescribes its application in worms [297]

Śirīṣa[298] — It is mentioned under the *Śānta* group [299]

Śītikā[300] —

Śīpāla[301] — This is the ancient word for *Śaivāla* It grows in ponds and rivers It is *śīta* and thus alleviates heat (see *avakā*)

Śepaharsanī (*AVS*. 4 4 1-8, *AVP* 4 5 1-10) — It seems to be *Kapikacchu* which is a potent aphrodisiac

Śoci[302] — It destroys snake-poison

Śyāmāka[303] — It is a cereal and has very small grains It ripens in rainy season Its inaugural use is celebrated (*āgrayana*) in rainy season as of rice in autumn and of barley in spring (*Jaim Gr* 1 24)

Śyenahṛta — It is a substitute of *soma* [304]

Saha[305] — Roth takes it as a plant but bloomfield thinks it as an epithet in the sense of 'powerful' [306]

Sugandhitejana — It is a fragrant plant used extensively in sacrifices. Its odour is prominent[307] Bṛhaddevatā (7 78) describes it as *Snāyu* of the cosmic *Puruṣa (sugandhitejanam snāyu)*.[308] The commentators have interpreted it as *sugandhitṛṇa*. MK also take it as aromatic grass.[309] GP also has adopted the same view.[310]

Sairya — It is mentioned in RV (1.191.3) among grasses Sāyaṇa has interpreted it as '*aśvavāla*' which grows in watery places. It seems to be *Saireyaka*.

Soma — It was regarded as king of herbs. It grew on the mountain known as *muñjavān* and was brought therefrom *Kuṣṭha* is said to be companion of *Soma*. Its juice was stimulating and was taken with milk, curd, gruel or honey It is dealt in detail in the ninth mandala of *RV* It was not easily and universally available and as such some substitutes were prescribed in later texts[311] It is called as *amīvahā* (destroyer of diseases)[312]

Regarding identification of *soma*, there is a lot of controversy[313] If one looks minutely, it would be evident that initially soma denoted the principle which sustained and nourished the plant, and was in the form of water or sap[314] It maintained the plant kingdom in the same way as a king maintains the subjects of his kingdom It is on this analogy that *soma* was declared as the king of herbs Even in earlier parts of *RV* its character as a plant is not clear[315] Only in later portion they took some plant as a symbol of *soma* This also is doubtful because it has lost this position in *A V*. and soon in Brāhmans there appeared a long list of substitutes In Āyurvedic treatises too *soma* is not a reality but a myth as the word was reduced as a synonym of moon and the characters were set on this basis[316] As regards the drinking of *soma* and its consequent exhilarating effect it was nothing else but the state of divine bliss (*ānanda*) Soma is the lord of the Wine of delight, the wine of immortality[317]

Somāvatī[18] — It is one of the four principal Rasāyana plants It may be Śatāvarī

Spandana — In RV (3 53 19), it is mentioned as having strong heartwood.

Sraktya[319] — It is mentioned as one of the Śānta Vrksas Its amulet is prescribed Sāyana has taken it as *tilaka*

Svadhiti — It is a great tree distinguishable in forests[320]

Harìdru — In RV (1 50 12) it is read as 'hāridrava' which is interpreted by Sāyaṇa as 'haritāladruma' (haridru)[321] MK have identified it as Devadāru[322] which is incorrect GP has also done the same mistake[323]

Hiranyaparna — It seems to be some herb having golden leaves[324]

Hlādikā[325] —

There is continuity of the use of the above plants in Indian tradition and the Ṛgvedic plants like ásvattha, palāsa etc are still being used with the same name and form However, there was, on lapse of time, slight change in the names of certain plants such as gulgulu, kārsmarya and pātā became guggulu, kāśmarya and pāṭhā respectively In the third category come those names which became quite obsolete later on such as Jaṅgida, cīpudru etc. It is not possible to say whether these plant species became extinct or there was only change of name.

Groups Of Drugs

There are several groups defined in *Atharvapariśista* (32) *ganamālā KSS* (8 15 16) has enumerated the following plants as '*Śānta*' used in *Śāntikarma*) —

1	*Palāsa*	2	*Udumara*	3.	*Jambū*
4	Kāmpīla	5	*Srag*	6.	*Vaṅgha*
7	*Śiriṣa*	8	*Sraktya*	9.	*Varaṇa*
10	*Bilva*	11	*Jaṅgida*	12.	Kutaka
13	*Garhya*	14	*Galāvala*	15	*Vetasa*
16	*Simbala*	17	*Sipuna*	18	*Syandana*
19	*Araṇikā*	20	*Aśmayokta*	21	*Tunyu*
22	*Pūtudāru*	23	*Citti*	24	*Prāyaścitti*
25	*Śamī*	26	*Śamakā*	27	*Savamsā*
28	*Śamyavākā*	29	*Talāsā*	30	*Vāsā*
31	*Śimsapā*	32	*Darbha*	33	*Apāmārga*
34	*Dūrvā*	35	*Vrīhi*	36	*Yava*

There is a group '*miśradhanya* (*KSS* 8 20) which contains *vrīhi, yava, godhūma, upavāka, tila, priyaṅgu* and *śyāmāka* Here Dārila takes '*upavāka*' as '*abhiyava*' which is common in Saurastra

It is difficult to label the vedic plants with acurate botanical names and that is why the opinions of scholars on this topic vary greatly So any new attempt would only add to the existing confusion Still, as in the last half a decade or more, fruitful light has been shed on identification of plants and several items are decidely identified, there is scope for porposing such a list which may be informative for the scholars With this end in view and based on the foregoing discussions the following list is drawn up —

Botanicl Names of Vedic Plants

	Synonyms	Botanical names
Ajaśṛṅgī	*Arātkī, tīksnaśṛṅgī*	*Gynandropsis pentaphylla DC*
Anu		*Panicum milliceaum Linn*
Atasī	*Umā, ksumā*	*Linum usitatissimum Linn*
Adhyaṇḍā		*Mucuna monosperma*
Aparājitā		*Clitorea ternatea Linn*
Apāmārga	*Pratīcīnaphala*	*Achyranthus aspera Linn*

Araṭu	*Aralu*	*Ailanthes excelsa Roxb*
Arundhatī	*Lākṣā, śilācī*	*Laccifer lacca (Kerr)*
Arka		*Calotropics procera (Ait) R.Br.*
Alābu		*Lagenaria vulgaris Ser.*
Avakā	*Śīpāla, śevala, śaivāla*	
Aśmagandhā	*Aśvāvatī*	*Withania somnifera Dunal*
Aśvavāra	*Kāśa*	*Saccharum spontaneum Linn.*
Asiknī	*Nīlī*	*Indigofera tinctoria Linn.*
Ādāra	*Pūtīka, ūtīka*	*Cymbopogon martini (Roxb) Wats.*
Āmalaka	*Amalā*	*Emblica officinalis Gaertn*
Āmra		*Mangifera indica Linn.*
Āvayu	*Sarṣapa*	*Brassica campestris var sarson Prain*
Āsurī	*Rājikā, lokeśī katukapatra*	*Brassica jucea Linn or Brassica nigra Linn*
Iksu		*Saccharum officinarum Linn.*
Udumbara	*Bhadra*	*Ficus glomerata Linn*
Urvāru	*Ervāru*	*Cucumis utilissimus Roxb*
Ūrjayantī	*Balā*	*Sida cordifolia Linn*
Eraṇda	*Tājadbhaṅga*	*Ricinus communis Linn*
Kaṅkatadantī	*Atibalā*	*Abutilon indicum (Linn) SW.*
Kanaknaka	*Dhattūra*	*Datura metel Linn*
Karañja		*Pongamia pinnata (Linn) Merr*
Karīra		*Capparis aphylla Roth*
Karkandhu		*Zizyphus nummularia W H*
Kāndāviṣa		*Aconite sp*
Kārsmarya		*Gmelina arborea Linn*
Kumuda		*Nymphoea alba Linn*
Kuśara (Kuśa)		*Desmostachya bipinnata Stapf.*
Kustha	*Nagha, Naghamāra, naghārisa*	*Saussurea lappa C B Clarke*
Krmuka	*Kramuka, apaskambha*	
Kṛsnala		*Abrus precatorius Linn*
Krsnā	*Indravāruṇī*	*Citrullus colocynthis Schrad*
Kyāmbū		*Cyperus rotundus Linn*
Ksumpa	*Ahicchatraka*	*Agaricus campestris Linn*
Khadira	*Vibādha*	*Acacia catechu Willd*
Kharjūra		*Phoenix sylvestris Roxb*
Khalakula	*Kulattha*	*Dolichus biflorus*
Khalva	*Nispāva*	*Dolichus lablab Linn*
Gavedhuka		*Coix lachryma-jobi Linn*
Gulgula		*Commiphora mukul (Hook ex Stocks) Engl*
Godhūma		*Triticum aestivum Linn*
Canaka		*Cicer arietinum Linn*
Cīpudru	*Śīpudru*	*Pinus longifolia Roxb*
Jaṅgida	*Arjuna?*	*Terminalia arjuna W & A*

Jambīra		*Cıtrus lımon (Lınn) Burm f.*
Jivantī		*Leptadenıa retıculata W & A*
Talāsā	*Tālīśa*	*Abıes webbıana Lınn*
Tıla		*Sesamum ındıcum Lınn*
Tılvaka		
Tṛṣṭā (Tṛṣṭıkā)	*Ghuṇajambhanī, bāṇāparṇī*	*Tephrosıa purpurea (Lınn) Pers*
Trāyamāna		*Gentıana kurroo Royle*
Darbha	*Śatakāṇḍa, sahasrakaṇḍa, sahasravīrya*	*Imperata cylındrıca Beauve*
Dūrvā	*Aghadvıstā, sahasrakānda, śatamūla, sahasravırya, śapathayopani, devajātā, apāghā, śād*	*Cynodon dactylon (Lınn) Pers*
Dhava		*Anogeıssus latıfolıa Wall.*
Nada		*Phargmıtes maxıma Blatter & MC Cann*
Naladī	*Keśī, keśanī, vāladuccha, māmsī*	*Nardostachys jatamansı DC*
Nitatnī	*Kākamācī, kācīmacī, keśadrmhanī, keśavardhanı, jıvī, cupunıkā*	*Solanum nıgrum Lınn*
Nīvāra		*Hygroryza arıstata Nees*
Nyagrodha	*Vaṭa*	*Fıcus bengalensıs Lınn*
Nyastıkā	*Śamkhapuspī, śuklapuspā, saṁuspalā, saṃvananı, subhagaṅkaranı*	*Convolvulus plurıcculıs Choıs*
Padma	*Kamala, pundrīka, puskara*	*Nelumbo nucıfera Gaertn*
Paruṣavāra	*Parusāhva*	*Grewıa asıatıca Lınn*
Parna	*Palāśa, āhva, kıṃśuka*	*Butea monosperma (Lam) Kuntze*
Pāṭā	*Uttānaparnā, devajūtā, sahamāna*	*Cıssampelos pareıra Lınn*
Pıppalī	*Atıvıddhabhesajī, ksıptabhesajı, vātıkrtabhesajı*	*Pıper longum Lınn*
Pītudāru		*Berberıs arıstata Lınn*
Pīlu		*Salvadora persıca Lınn*
Pūtadāru	*Pūtadru*	*Cedrus deodara (Roxb) Loud*
Prśnıparṇī		*Urarıa pıcta Desv*
Prıyaṅgu	*Phalavatī*	*Callıcarpa macrophylla Vahl*
Plaksa	*Pıpparı*	*Fıcus lacor Buch Ham*

Balvaja		*Pollinidium angustifolium Comb Nov*
Bāhlikā		
Bibhīdaka	*Bibhītaka*	*Terminalia bellirica Roxb.*
Bilva		*Aegle marmelos Corr*
Bhaṅgā		*Cannabis sativa Linn.*
Bhūrja		*Betula utilis D.Don*
Mañjiṣṭhā		*Rubia cordifolia Linn*
Maṇḍūkī	*Maṇḍūkaparnī*	*Centella asiatica (Linn.) Urban.*
Madugha	*Madhuka, madhulā, madhu-yaṣṭikī, maśakajambhani*	*Glycyrrhiza glabra Linn.*
Masūra	*Maṅgalya*	*Lens culinaris Medic*
Mahārajana	*Kusumba*	*Carthamus tinctorius Linn.*
Māsa		*Phaseolus mungo Linn.*
Mudga		*Phaseolus radiatus Linn*
Yava		*Hordeum vulgare Linn.*
Yavāsa		*Alhagi camelorum Fisch.*
Rajanī	*Haridrā*	*Curcuma longa Linn.*
Rajjudāla	*Nīcudāra*	*Olax scandens Roxb.*
Rāmā	*Bhṛṅgarāja*	*Eclipta alba Hassk.*
Rohitaka		*Tecomella undulata (G.Don.) Seem*
Liṅgā		*Bryonopsis laciniosa Linn*
Vadhaka	*Āragvadha*	*Cassia fistula Linn*
Vandanā		*Loranthus longiflorus Desr*
Vamśa	*Venu, tejana, suśira, dandana*	*Bambusa arundinacea Willd*
Varana	*Varanā*	*Crataeva nurvala Buch Ham*
Vāsā	*Vrsa*	*Adhatoda vasica Nees*
Vikaṅkata		*Flacourtia indica Merr*
Visā	*Ativisā?*	*Aconitum heterophyllum Wall*
Visānakā	*Karkataśṛṅgī?*	*Pistacia integerrima Stewart ex Brandis*
Vīrina		*Vetiveria zizanioides (Linn) Nash*
Vetasa		*Salix caprea Linn*
Vrīhi	*Śāli, sastika*	*Oryza sativa Linn*
Śana		*Crotalaria juncea Linn*
Śatavāra	*Hiranyaśṛṅga, Rsabha, dūrnāāmacātana, somavati?*	*Asparagus racemosus Willd*
Śaphaka	*Śṛṅgātaka?*	*Trapa bispinosa Roxb*
Śamī		*Prosopis spicigera Linn*
Śara	*Muñja, arusrāna, āsrāvabhesaja*	*Saccharum munja Roxb*
Śalmali	*Simbala*	*Bombax ceiba Linn*
Śimśapā	*Śamśapa*	*Dalbergia sissoo Roxb*

Śigru		*Moringa pterygosperma Gaertn*
Śirīsa		*Albizzia lebbeck Benth.*
Śyāmāka		*Echinochloa frumentacea Linn.*
Sugandhitejana		*Some aromatic grass*
Sairya	*Saireyaka?*	*Barleria prionitis Linn*
Soma		
Spandana	*Synadana*	*Ougenia oojeinesis (Roxb) Hochr*
Sraktya	*Tilaka*	*Wendlandia exerta DC*
Haridru	*Hāridrava*	*Adina cordifolia Benth & Hook. f*

References and Notes

1 *SB* (3 2 2 9) says that sacrifices would not have been possible if there were no plants
2 RV 7 4 5, *SB.* 1 5 2 4, 4 5 etc , *Go Br* 1 1 13, *Ch Up* 5 10 6, SV Up 2.17, also Pāṇini 8 4 6
3 *AVS.* 8 8 14, 11.9 24, 15 6 2
4 *CS. SU.* 1 72-72
5 *cśadhisūkta* 1-2
6. Ibid. 3,15 (also *AVS.* 8 7 26)
7. Ibid 18
8. Ibid. 2
9. Ibid 3
10. Ibid 12
11. Ibid 18
12. Ibid 21
13. Ibid 9
14 Ibid 14
15 Ibid 20.
16 Ibid 5
17 Ibid 7
18 Ibid. 22 (also *AVS* 2 9 3-5)
19. Ibid 6
20 Ibid 4
21 AVS 8 7 1
22 Ibid 8 7 4
23 Ibid 8 7 9, 17, 19 44 6
24 Ibid 11 6 (4) 16
25 *Br Up* 3 9 1-6
26 *AVS* 8 7 23-25
27 GP Keeps it separate with *aratu* as synonym and identifices as *Prosopis spicigera* (as suggested by Weber) and *Acacia suma 'Arātki'* means 'horned' — see Tarapada Chowdhury, on the interpretation of some doubtful words in the *Atharvaveda, J B O* R S XVII, pp 36-38, 1930-31
28 *AVS* 4 37 2 (*Ajaśrṅgākrtiphalayuktatvād ajaśrṅgītyucyate-Sāyana*), 4 37 6 (*Tīksne ugragandhe śrṅgākrtiphale yasyāh-Sāyana*), *AVP* 13 4 2

29 Odına wodıar and Gymnema sylvestre (*Ved. Pl* 646) Bloomfıeld takes *Ajaśṛṅgī* as *odına pınnata (HA.* 33, 408)
30 *Vaj Sam* 18 12, Br Up 6 3 13
31 *AP* 36.24 2
32 *Rāmacandrapaddhatı* and *Nārāyanabhāsya*
33 *Maıt Sam.* 2 6 3, 4 3 4, *AVP* 2 26 4-5 etc *AVS* 4 17 1-8; 19 1-8; 7 65 1-3
34 *Ved Ind* I-25-26, Bloomfıeld, *HA* 394
35 *Idam vaśīkaranakārı bhesajam sauvarcalākhyam*
36. In *AVS.* 20 131 15, There ıs *aratuparnah*
37 *Ved Ind.* I 33
38. *Ved pl.* 647
39. Op. cıt
40. *AVS.* 4.12 1-7, 5 5 1-9, 6 59 1-3, 8 7 6.
41. Fıllıozat *Classical Doctrıne,* P 133
42. *Ved* Pl 647,
43 *Ved Ind.* I-35, also Grıffıth
44. *SB.* 10 6 2 5-7
45 *AVS.* 6, 72 1
46 *Tand Br* 14 11 9 (*Annam khalvaśanasādhakatvādarka ıtyucyate-Sāyana*)
47 Descrıbıng the latter Sāyana says — *Tūlasama-babhruvarna — mañjarīmūlānı arjunānı śyamalānı trnānı-Tand Br* 9 5 7
48 *Tvāmarjunausadhīnāmpayo brāhmanā ıd bıduh (Taıt Ar* 6 9 1)
49 *Tand Br* 8 4 1 Also see — *SB* 2 1 2 11, 5 4 3 7, *Aıt Br* 5 15
50 *AVS* 8 14 14, 15 1,20 132 1-2, 135 3 *AVP* 16 135,8-9)
51 *Taıt sam* 4 6 1 1, 5 4 2 1, 4 4 2, *Maıt Sam* 2 10 1, 3 3 6 *AVS* 4 37 8-10, *AVP.* 9 7 1-15, 16 12 9
52 *SB* 13 8 1 16
53 See also *Ved Ind* I 41
54 See *Maıt sam* 1 6 12, SB 12 7 1 1, *Taıt Br* 1 1 3 9
55 Pıppala fruıt ıs mentıoned wıth *āmra* and *udumbara ın Br Up* (4 3 36). In *RV* (5 54 12) Sāyana ınterprets '*pıppala*' as 'udaka'
56 AP 23 6 5 *Śamī, palāśa, Khadıra, vıkaṅkata, aśvattha, kārsmarya, udumbara* and *bılva* are sacrıfıcıal trees
57 See *Maıt sam* 1 6 5 *Taıt sam* 3 4 8 4 *AVS* 3 6 1-8, 4 37 4, 20 131 14, AVP 1 66 1-4, SB 11 5 1 13-17 See also *Ved Ind* I 43-44
58 *Maıt sam* 3 7 9, *AVS* 10 4 2, *SB* 3 4 1 17
59 *Ved Ind* 1-44, *Ved* pl 648
60 Also *Taıt sam* 4 2 6 3, *AVP* 11 6 10.
61 Also *Taıt sam* 2 4 4 1,2 (*Svayam krsnavarnā śvaıtyavınāśanenāsıtam krsnavarnam tasmın pradeśe sampādayatı ıtyasıknī Tathavıdhe he nīlākhyaasadhe-Sāyana*) *AVP* 1 16 1
62 *Andākrteh Kandādutpannam*
63 *Ved ınd* I-361
64 *Ved Pl* 646
64a TP Op cıt p 46
65 '*Buddhīnām ādārah prerakah*

66. *SB*. 14.4.2 12, Also *Tait. Br*. 1 4 7.5,6, *Ved. Ind* I 58
67. *SB* 4.5 10 5
68 Ibid. 14 1 2.12
69. *Tait. Br*. 1 4 7 5.
70. *Tand. Br* 9 5 4
71. *Kāt. Sr*. 25.12 19
72. *Tait. Br* 2.5 3 5; *Ap. Sr*. 1 4 26.
73. *KSS*. 22 14
74 Ibid. 25.11
75 *Tait. Sam*. 1 8.10 1, *Kath. Sam*. 1 5 5
76 *Mait. Sam* 2.6 67 9, *SB* 5 3 3 8 *Harisvāmin* in his comm on the latter says that *nāmba* is wild paddy (*Nāmbā nāma akr̥ṣtapacyā svyavamjātā vrīhayah*) *Ved. ind* I. 59
77 *JB*. 2.156, *Br Up* 4 3 36
78. *AVS*. 6 16 1-2, *AVP*. 19 5.7-8
79 Keśava on *KSS* 30.1.
80 *AVS*. 8.6.24 (*bajah śvetasarsapah, pingah gaurasarsapaḥ-Sāyana*)
81. *KSS*. 35.20
82. See *AVS*. 8.6 1-26, *AVP*. 16 79 1-10, 80 1-10, 81 1-8
83. *Ved Ind* I-59.
84. *AVS*. 1 24 1-4, 7 38 1-2, *AVP* 1 26.1-4, 20.30 7
85. *Āsurī asuramāyārūpā strī* (1 24 2) *Āsurī asurasya māyā* (7 38.2)
86. Also *AP* (35) Here it is clearly a plant having pungent leaves
87. *Mait Sam* 3.7 9,15 1, *AVS* 1 34 5
88. *AVS* 6 14 3, 9 3 18
89 Also *Ath Anu* 4 4
90 Ūrg vā udumbarah-Mait Sam 1 11 8 Also *SB* 6 6 3 2-3 *Ait Br* 5 2-4
91 *Ved*. Pl 663, also *Ved Ind* I-87
92 *RV* 10.97.7
93 *AVS* 8 7 6, *AVP* 16.12 6
Sāyana takes it as an epithet of *pāthā* or as an independent plant
94 *Mait. Sam* 3 11 2,9 *Kan Sam* 21 2 10-12, 23,4,2, *SB* 12 7 1 3, 2 9, 9 1 5, *Tait Br* 2 6 11 2, 4 5
95 *Ved Ind* I 94 (It can't be taken as *Yava* as Mahīdhara says because they are mentioned together in *SB* 12 7 2 9) *Ved Pl* 664
96 *SB* 12 7 2 9
97 *RV* 7 59 12, *AVS* 6 14 2, 14 1 17, *SB* 2 5 3 12
98 *Ved Pl* 664 , also see Ved Ind I 101
99 *SB* 4 2 15, also 3 4 3 13
100. *Ved Ind* I 103
102 *RV* 10 97 7, *AVP* 11 6 10
103 For *balā* see AVP 19 39 1-13
104 *Ved Ind* I-105
105 See *Ved Ind* I 121
106 *Ved Pl* 650
107 *Ved Ind* I 126, *Ved Pl* 648

108 *RV.* 1 191 1,7 (*Kaṅkataḥ alpavıṣaḥ-Sāyana*).
109 *AVS* 10.4 22
110. *Ved. Ind* I 135
111 *TP* 59.
112 *AVP.* 20 56 9 (*Śuṅgavātā kṛṣṇaphalā Kabrū balāsabhesajī*)
113. *Ap Dh.* 1 5 17 26, *Vıs. Dh* 61 14
114. *Ved. Ind.* I 138
115 *Maıt Sam.* 1.10.13,18; *Taıt Sam* 2 4 9.2, *SB.* 2.5 2 11
116. *Ved. Ind.* I. 139; *Ved. pl.* 651.
117. *Madhurāḥ phalaviśeṣāh karīāṇı, tānı cottarāpathe Prasıddhānı-Sāyana.*
118. *Maıt. Sam.* 3.13.3.
119. Ibıd. 2.4 1
120. Ibıd 3 11 9, *Kath. Sam.* 12 10
Even today powder of *Karkandhu* ıs offered to Lord *Śıva* at *Vaıdyanātha temple* (Deoghar-Bıhar) and dıstrıbuted as *prasāda.* It is called as *'Baircun'* (powder of *badarı*).
121. *SB.* 12 7 2.9
122 Ibıd. 12 7 1 4 (*Yat snehas tat karkandhu*)
123 *Hır Sr* 1 3 10
124 *Baudh. Sr* 17.39. See *Ved Ind.* I 139, *Ved Pl* 651
125 *AVS.* 4 6.7-8, 10 4 22, *AVP* 16 17 2-3
127 *Maıt. Sam* 3 7 9, 10 1,2 6, *Taıt Sam* 5 2 7 3-4, 6 2 1 5 Also *SB* 3 4 1 16; 7 4 1 37, 39, 41, *Ap Sr.* 1 2 30, *Baudh Sr* 4 1
128 *AVS.* 4 34 5, *AVP* 6 22 8, *KSS* 106 7
129 *Maıt. Sam.* 4 5 7, *SB.* 1 3 1 3, 3 1 2 6, 4 5 10 6 etc
130 *AVS* 5 4.1-10, 6 95.1-3, 19 39 1-10, *AVS* 1 31 1-4, 93 1-4 etc
131 *'Sa kustho vıśvabhesajah sākam somena tısthatı'* (*AVS* 19 39 5-8)
132 See *Ved Ind* I 175, *Ved Pl* 654
133 Sāyana on *SB* 6 6 2 11 The word *'Kārmuka'* for bow ıs derıved from *'Krmuka'*.
134 *Maıt Sam* 3 1 9, *Taıt Sam* 5 1 9 3,5 *Taıt Br* 1 4 7 3, *Sad Br* 4.4
135 *Taı. Sam* 2 3 2 2,3, *Maıt Sam* 2 2 2, *Ks* 11 19 52 20 See also *Ved Ind* I-185.
136 *AVS* 6 138 1-5, *AVP* 1 68 1-5, 20 29 4
137 *Ye te nādyau devakṛte yayostısthatı vrsnyam te te bhınadmı śamyayāmusyā adhı muskayoh* (*AVS* 6 138 4)
138 *AVS* 20 63 5, also *Ved Ind* I-209
139 *Yāska,* 5 16 and accordıngly Sāyana on *Rv*
140 *AVS* 2 8 1 5, *AVP* 1 99 1-4, 19 35 7-10
141 *RV* 3 53 19, *Maıt Sam* 3 9 3, *AVS* 3 6 1-8, 10 6 6-10
AVP 2 58 1-6, 16 42 6-8, *SB* 3 6 2 12, 13 4 4 9, *Aıt Br* 2 1,
142 *Khadıraburburau gaurakāndau sūksmaparnau, kaṅkatavān khadıra ıtı*
MB 1 1 4 5 Also *Ved Ind* I 213-214
143 *Kath Sam* 9 10, 36 7, *Taıt Sam* 2 4 9 2, *Maıt Sam* 1 10 12
144 *Br* Up 6 3 13, KSS 82 18
145 *KSS* 29 15

146 *Madh. Sam.* 18.12, *Br Up* 6 3 13,
147 *Ved. Pl.* 652; *Ved. Ind* I 215.
148 *Tait. Sam* 2 4 4.1-3 (Sāyana says that ıt ıs a wıld cereal lıke green gram), Maıt Sam 2.2.4.
149 *Ved. Ind* 1 222
150 *Ved Pl.* 65
151. *Taıt Sam* 1 8.7 1, 9 1-2, *Maıt Sam* 2 6 3,5,6,4.3 8. SB 5 2 4 13, 5 3 1 10, 3 7, 9 1 1.8, 14 1 2 19
152. *Maıt Sam* 3 8 5, *AVS* 4 37 3, 19 38 1-3, 2 36 7 *KSS* 10 19, 20 25, 34 14
153. Sāyana's *Int.* on 2 26
154. *Taıt Sam.* 4 7 4 2, *Maıt Sam.* 1 11 8, 2 11 4, 3 11.2,9 *Taıt Br.* 1 3.72, *Br. Up* 6.3 22, *KSS.* 8 20 *AVP.* 9 11 12
155 *Madh Sam* 18 12, *Keśava on KSS* 27 14-17 (*krsna kanaka ın treatment of worms).*
156. *AVP.* 2 37 1; *KSS* 8.16; *Keśava* on *KSS* 30 11, 31.8
157. *AVS* 6 12, 7 1 -3, *AVP* 1 90 1-4 (*Śīpudru*), *Ved Ind I* 262
158 *AVS* 2 4 1-6 (*Jāṅgıdo vrksavıśesah vārānasyām Prasıddhah-Sāyana*), 19 34 1-10, 3 5 1-5 (*Jaṅgıḍo nāma kaścıd osadhıvıśesah, sa ca uttaradeśe prasıddhah-Sāyana*)
AVP. 2.11 1-5, 4.18 1-7, 11.3, 1-10, 4 1-5, *KS* 8 15, 42 33
159 *Ved Pl* 651, Also see *Ved ınd* ı 268.
160 *Maıt. Sam* 3 15 3, *Madh Sam.* 25 3, *Kath. Sam.* 5 12 1
161 *Kath. Sam.* 21 6, *Taıt. Sam* 5 4 3 2, *SB.* 9.1.1 3
162 *Ved Ind* ı-279
163 *AVS.* 6 15 3, 8 10 7, *KSS* 8 16
164 *Talāsā mālıkā avalı prasıddhā*
165 *Ved Pl.* 66 3, *Ved Ind* I-103, Also Whıtney I 291
166 *Maıt Sam* 2.11 4, 4 3 2, *Taıt Sam* 4 7 4 2, *AVS* 1 7 2, 2 8 3 etc , *AVP* 8 18 9 etc , *SB.* 9 1 1 3, *Go Br* 2 1 17, *Ch Up* 5 10 6 '*Tırya*' (*AVS* 4 7 3) ıs also translated somewhere as *tıla* (see Bloomfıeld, *HA*, 377)
167 *Maıt Sam* 3 1 9 (esa vanaspatīnam vajrah), SB 13 8 1 6
168 *Ved ınd* I 312, Ved Pl 663
169 B C. Law *Ancıent Indıan Flora, Indıan Culture,* Vol XV, No 1
170 *AVS* 7 113 (118) 1-2
171 '*Trsṭā tvamasi gandhenausadhıh ghunajambhanī ākhor ghunasya jātānı tānı jambhaya tejasā*
172 *Dāhajanıkā he bānāparnyākhyausadhe* — Sāyana on *AVS* above
173 *AVS* 8 2 6, 6 107 1-4, *AVP* 8 2 11, 15 16 3 etc see *Ved Ind* I-328
174 Also *Maıt Sam* 1 7 2 (*Apa* osadhayo yad darbhāh), AVS 19 28 1-10, 32 1-10, 33 1-5, 30 1-5, 29 1-9, 10 4 2, 13, *AVP* 1 87 1-4 etc , SB 2 2 3 11, 3 1 3 18 etc , *Jaım Br* 1 63 See *Ved Ind* I-340
175 *AVS.* 6 43 1-3
176 *AVS.* 8 7 20, 11 6 15
In the former, *darhha* ıs read wıth *aśvattha, soma, vrīhı* and *yava* whıle ın the latter wıth *soma, bhaṅga, yava* and *saha*
176a *AVS* 2 9 1, *AVP* 2 10 1-5

177 *Palāśādıdaśavṛkaśakalānı*
177a *Palāśodumbarādıdaśavṛksaśakala.*
178 Ved. Ind I 345.
179 Maıt Sam. 2 7 15, Taıt Sam 4·2 9.2;
AVS 2.7 1-5, 6 106 1, AVP 19 33 5, SB 7 4 2 12, Aıt Br 8 5, 8, KSS 8 16, 24 18. etc
180 Muner devasya mūlena sarvā vıdhyāmı tā aham — AVS. 7 78 (74) 1 Sāyaṇa, ın alternatıve explanatıon, says that ıt may be the tree known as Venudārbhūsa by which bow ıs made (Atha vā muner devasya, ıtı padadvayena dhanuhprakrtıbhūto venudārbhūsasamȷñako vrksa ucyate)
181. AVS. 5.5 5, 20 131 14, AVP 6 4 4, 9.6 11
182. RV 8 1 33, AVS. 4 19.1, 6 137, 2-3, 138 5, 12 2 1, 19,50,54, AVP 1 68.1, 5 25 1, 5 32 10 etc KSS 48 33-34, 71 3. Patañȷalı has mentıoned the water of ponds havıng nada plants as 'nadvalodaka' whıch causes dısease of feet (naḍvalodakam pādarogah). Nādī (blowıng pıpe) was also made of nada (see MB 1 1 59, 4 1 96) Also see Ved Ind I 433
183. AVS. 6 102 3 Sāyana takes ıt as uśīra AVP 2 77 2, 19 14 3, KSS 51.12
184 Gulgulvādīnı pañca homadavyānı (Sāyana) Tand Br 21 4 13, See Ved Ind I-459
185. AVS 6 136 1, Also Maıt Sam 2 8 13, Taıt Sam 4 4 51, AVP 1 67 1-4; 7 5.6-7, 20 37 4-5 See Ved Ind I 449
186 Kath Sam 12 4, Maıt Sam 2 4 10, SB 5 1 4 14, 3 3 5 See Ved Ind I-457
187 Maıt Sam 4 4 2, Aıt Br 7 31 (Ksatram vā etad vanaspatīnām yan nyagrodhah) Also SB 5 3 5 13, 12 7 1 9 etc , AVS 4 37 4, 5 5 5, AVP 6 4 4, 13 4 7, Ch. Up 6 12 1, KSS 52 6
188 MB 1 1 55 (Ye ksīrıno 'varohavantah prthuparnāh te nyagrodhāh)
189 Ved Ind 1-462
190 AVS 6 139 1-5
191 Also Ibıd 6 129 1-3, 139 1-5, 7 38 3-5 See *Ved Ind* I 463
192 '*Medhyā vıśesena ca śaṅkhapuṣpī* — *CS Cı* 1 3 31
193 Go Br 1 3 16, *Taıt Aı* 10 11 2,
194 *RV* 10 142 8, *AVS* 6 106 1, *AVP* 6 22 8, *SB* 5 4 5 6-14, *Go Br* 1 1 39, *Ch Up* 1 6 7, 8 1 2, *Br Up* 2 3 6
195 *RV* 7 33 11, 8 72 11, *Taıt Sam* 5 1 4 4, *SB*. 4 1 5 6 etc *Go Br* 1 1 16
196 *Ved Ind* ıı-9, Ved Pl 658
197 Also see *AVP* 16 79 9, 19 25 4 See *TP* 60
198 *AVS* 10 4 2
199 Ibıd 8 8 4, *AVP* 16 29 3
200 Also see *AVS* 20 135 3, 18 4 53, 3 5 1-8 (*Parna-manı*), *AVP* 3 13 1-8, 11 6 6, *SB* 1 7 1 1, 6 5 1 1, 13 4 4 10 *Ch Up* 2 33 3, *Br Up* 3 9 28 1, KSS 30 15
201 Keśava on *KSS* 25 20
202 *Ved. Ind* I-500 506
203 *Ved Pl* 653, *Ved Ind,* 1-156
204 *Sukımśukam śobhanakımśukavrksanırmıtam*
205 '*Śāndadūrvā Jalasamīpe utpadymānā andākrtı-mūlasahıtā dīrghakandā vā dūrvā śāndadūrva sā brhad dūrvetucyate*

206 Also *AVS* 3 18 1-6, *AVP* 7-12 1-10, *KSS* 38 18, Keśava on *KSS* 38 19 21
207 *AVS* 6.109 1-3, *AVP*. 19 26 8-10, 31 11, *KSS* 10 16,26 38 *JB* 3 149, Keśava on *KSS* 26 33-40
208 *Kath. Sam* 25 6, *SB* 13 4 4 5-7
209 *AVS* 4 37 3, *AVP* 13 4.3
210 *AVS* 20 135 12 (The ripe fruit of *pīlu*), *AVP* 7 19 1-10
211 *Ved Pl* 656
212 *AVP* 1 5 3
213 *AVS* 8.7 6, AVP 16 12 6, Keśava on KSS 26 22-24
214 Also see *Mait Sam* 3 8 5, JB 2. 274,
215 *KSS* 8 15, 58 15 (Here read as '*Pūtudāru*) Dārila interprets it as *devadāru*
216 *AVS* 2 25 1-5, AVP 4 13 1-7, 22.6, SB 13 8 1 16 KSS. 8 25, 26 36 (Keśava on 26 33-40)
217 For different plants taken by this name see Ved Ind i'-19 GP also mentions all these plants (Ved Pl 657)
218 In *AVS* 14 2 48 it is *Prsātakī*
219 *Tand Br* 8 1 1
220. *AVS* 4.37 3,
221 Also KSS 8 17, here reading is 'Pramanda'
222 *Mait Sam* 2 1 8, 11 4, *Tait Sam* 2 2 11 4; 4 7 4 2, Tait Br 3 8 14 6, JB 3 101, Ait Br 8 16, *KSS* 8 20, 32 2
223 Ved Pl 657 Ved Ind ii-52 (It mentions only the cereal)
224 *Mait. Sam* 3 10 2, *Tait Sam* 3 4 8 4, 6 3 10 2, SB 3 8 3 10,12, Ait Br 7 32, 8 16 (*Plaksa* along with *nyagrodha, udumbara* and *aśvattha* makes the group '*Vānaspatya-catustaya* Later on, it was developed as '*Ksīrivrksapañcaka* or *Pañcavalkala*)
225 *AVS* 6 14 1-3
226 *RV* 8 53 3, *Mait Sam* 2 2 5, *Tait Sam* 2 2 8 1-2 *AVS* 14 2 22, 23, AVP 18 9 3-4, *SB* 14 1 3 11
227 *Ved ind* ii-63, Ved Pl 649
228 AVP 20 39 2
229 RV 7 86 6, 10 34 1 '*Bibhīdaka*' of RV became '*vibhītaka*' later on Also see Mait Sam 2 1 6, AVP 19 32 8-10,20 22 6-7
230 *Vibhītako* vibhedanāt-Yāska 9 8 (Vibhettā kosthasya-Durga)
231 *Mait Sam* 3 9 3, AVS 20 136 15, SB 1 1 3 20, 3 3 20, 13 4 4 5, Ait Br 2 1
232 *Sarvameva* phalamādyam bhavati, hāridra iva hi majjā-SB 13 4 4 8
233 *Sank Ar* 12 4-8
234 *KSS* 8 15
235 *Bhangam śatrūnām bhañjakam* MK means it intoxicating (Ved ind ii-93)
236 Probably on this basis that Rahul Sankrtyayana took *bhangā* (cannabis) as *Soma*
237 *KSS* 14 28, 16 16, 22 14, 35 28, 47 39 (also Sāyana's *Int on AVS* 4 31)
238 Also *SB* 4 1 1 26
239 Also *AVP* 15 13 7, See *Ved Ind* II 93
240 *Mait Sam* 1.10 12, also see *Kath Sam* 36 6, *KSS* 38 9

241 *Sank Br.* 7 7, *Ait. Ar* 3 2 4 10

242 *AVS* 18 3 40 (*Maṇḍūkasya strī mandūkī tayā, yadvā mandūkaparnyākhyayā osadhyā-Sāyana*)

243 *AVS* 1 34 1-5 (*madughān madhumattarah*), 6 102 3 (*madughasya madhukavrkṣasya yastīmadhukasya vā-Sāyana)* Also *Ved Ind* II.122 Also *AVP* 2 32 1-5, 33.1-5 etc,

244 Also *KSS* 35 21, 76 8, 79-10

245 *AVS.* 7 57 1-2, 58.1-8

246 *Mait. Sam* 2 11 4, *Tait Sam* 4 7.4.2, *Br Up* 6 3 13.

247 *Br Up* 2 3 6 (Śankara takes it as *haridrā*, but it can't be so in face of the Kātyāyana's *vārttika*)

248. *Mait Sam* 1 4 10, 2 11 4, *Tait. Sam* 5 1 8.1; 4 3.2; *AVS.* 6 130.1 (Sāyaṇa takes '*Rathajitā* as māsa); 12 2.53, *AVP.* 17.30.4, 19 49 10, 20 39 3, *Go Br* 2.1 17; *SB.* 1 1 1 10

249 *KSS* 1 31-32, 36.13, 70 12, 71.6

250 *Rv* 1 161 8, 191 3,

251 *Kath Sam.* 19 10; *Tait Sam* 5 1 9 5, 10.5, *AVS.* 2.3.1-5, 1 2 4, AVP 9 7 12, 10 32 12, 20 33 6 SB 6.3 1 6, 12.8 3 6, 14 2 1 16, *KSS.* 14 28, 21.14, 25 6,26 2, 32, 32.3, 33 1-2, 46 36, *Ved ind.* ii-165

252 *Mait Sam.* 2 11 4, *Tait Sam* 4.7 4 2, *MB.* 4.3 154

253 *MB* 5.1 90, 4 3 166

254 *AVS* 4 34 5; *AVP* 6.22 8

255 *Ved Ind* ii-168

256 *RV* 1 23 15, 1.66 3 etc , also *Tait Sam* 6 20 10 3, *Kath. Sam* 15 10, *AVS* 8 7 20, 11 8 15, 12 1 42, 11 6 (amulet of paddy and barley) etc. *AVP* 9 8 1-8, 9 1-6, 16 4.8, Br up 3 14 9, *KSS* 7 5, 8,16 etc , Keśava on *KSS* 33-40 (*Yavamani*)

257 *RV* 1 38 5, 91 13, 3 45 3 etc , *SB* 4 1 4 10, 8 7.3.12 *Tait Br* 2 4 5 5

258 *Kath Sam* 30 1 (*tasmāttau Varsesu śusyatah*)

259 *AVS* 1 23-1-5, 20 135 2, *Tait Br* 3 4 7 1.

260 Keśava on *KSS* 26 14, also 22 24, 30-10, 31 5, KSS 26 18,22, 28 4, 32 7, 38 9

261 *SB* 13 4 4 5, Tait Br 3 4 7 1 (*Ślesmātako rajjudālah-Sāyana*),

262 *JB* 2 274 (*Tasya yāni phalāni śisnānyeva tāni, atha yoh ślesmā reta eva tat*)

263 *Ved Ind* II-199, *Ved Pl* 659

264 *AVS* 1 23 1-4, *AVP* 1 16 1 (Keśava adds *puspā* with other four drugs-*KSS* 26 22)

265 *Mait Sam* 3 9 3, *AVP* 9 7 13,

266 *KSS* 29 15

267 *RV* 10 10 13-14, *AVS* 6 8 1, 18 1 15-16, *KSS* 35 21

268 *AVS* 8 8 3-4

269 *RV* 7 50 2, *AVS* 7 120 (115) 2, also 7 118 (113) 1, *AVP* 20 17 8

270 *RV* 1 10 1, *Mait Sam* 4 8 10, *Tait Sam* 1 6 12 3, *AVS* 3 12 6, 9 3 4, *AVP* 16 39 5, 20 22 3, *SB* 9 1 2 25, *Tait Br* 1 2 3 1, *KSS* 36 6

271 *RV* 8 55 3, *Mait Sam* 3 1 2, 2 4, *AVP* 1 59 2, 4 14 1, *SB* 2 6 2 17, 6 3 1 31, 41,

272 *Mait Sam* 1 6 7, *AVS* 10 3 1-25, 6 85 1-3 *AVP* 5 8 8, 19 6 1-15, 16 63

1-10, 64 1-10, 65 1-4, *SB* 13 8 4 1, *Ch Up* 2 22 1, 3 8 1, *KSS* 8 15, 19.22; 26 37, 83 4, 85 13. See also *Ved* ınd II 244, Ved Pl 664

273 *KSS.* 8 16, also 39 6

274 *Kath Sam* 30 1, *KSS* 29 15, 33 14

275 *Maıt. Sam.* 3 1 9; *Taıt Sam.* 3 5 7 3, *AVS.* 5 8 1, 11 12 3, *AVP* 7 18 1, *SB.* 1 3 3 20, 4 1; 6 6 3 1, *KSS.* 48 8

276 *AVS.* 7 118 (113) 2

277 Ibıd 6 44 3 (*Vısānākā nāma vā ası pıtrnām mūlādutthıtā vātīkrtanāśanī*)

278 *Ved Pl* 665

279 *HA* 482

280 *AVS* 8 3 (Int)

281 *KSS* 18 10, 13, 25 30, 26 26, 31 13

282 *RV.* 4 58 5, *Maıt. Sam.* 2 7 17, *AVS* 10 7 41, 18 3 5, *AVP.* 8 13.5, 9 7 13, 17 11 2, *SB* 9.1 2 22, 24, etc

283 *Maıt Sam* 3 3 6 (*Apām vā etat puṣpam yad Vetasah*)

284 *KSS* 8 15, also 27 10, 40 3,7,8, Keśava on *KSS* 40 1-2

285 *RV* 10 16 13, *AVS* 18 3 6

286 *Ved Ind* ıı 336

287 *Maıt Sam* 3 10 2, *Taıt Sam.* 1 8 10 1, *AVS* 6 140 2, 8 2 18, 7 20, 9 6 14, 11 4 13, *AVP* 9 11 12, 16 13 10, Aıt Br 2 8 7, SB 5 3 3 2, *Ch. Up* 3 14 3, 5 1 5, *KSS.* 2 6-7 etc

288 *AVS* 2 4 5, *SB* 3.2 1 11, 6 6 1 24, *KSS* 25 28, 27 33 etc

289 *MB* 4 1 64, 5 2 4

290 *AVS* 19 36 1-6, *AVP* 2 20 4, 27 1 5

291 *AVS* 4 34 5, *AVP* 6 22 8 *Ved ınd* 11-354, *Ved pl* 660

292 *Maıt Sam* 1 6 5,12, *Kath. Sam* 36 6, *AVS* 6 11 1,12 1-3 30 2,3, *AVP* 19 12 1, 24 5-6, SB 2 1 4 5, 5 2 12, *KSS* 8 16, 28 9 etc Keśava on *KSS* 28 9-10, 31 8

293 Also *Maıt Sam* 2 1 6, *Taıt Sam* 5 2 6 2, *AVS* 1 2 1, 1 3 1-9, 8 8 4, *AVP* 16 54 2, SB 1 2 41 2, *KSS* 16 14, 36 14 etc Keśava on *KSS* 32 8, 35 3, 21, 48 21

294 Also RV 7 50 3, *Kath Sam* 44 1, *Taıt Sam* 7 4 12 1, SB 13 2 7 4, *Ved ınd* ıı-366, 380

295 AVS 4 34 5, *AVP* 6 22 8, *KSS* 83 3, 86 6

296 RV 3 53 19, *AVS* 20 129 7, 6 129 1-3 (*Śāmśapa*), *AVP* *19 32 1,2*, *KSS* 8 16, 34 1,

297 *KSS.* 29 23, 37 5,

298 *Sad Br* 5 2,

299 *KSS* 8 15

300 *RV* 10 16 14, *AVS* 18 3 60

301 *RV* 10 68 5, *AVS* 6 12 3 (*sıpāla*), 6 106 3 (here Sāyana ınterprets '*Jarāyu*' as suggestıve for *Śaıvāla*), 20 16 5, *AVP* 19 4 6, 1 5 4 (*Śevala*),

302 *AVS* 10 4 2

303 *Taıt Sam* 1 8 1 2, *Maıt Sam* 2 11 4, *AVS* 19 50 4, 20 135 12, *SB* 10 6 3 3, 12 7 1 9, *Ch Up* 3 14 3, *KSS* 8 20, 11 4, 74 16

304 *SB'* 4 5 17 3 4, *Kat Sr* 25 12 29

305 *AVS* 11 8 15, *AVP* 6 22 10, 15 23 12
306 *Ved. Ind* ıı-441
307 *SB* 3 5 2 7 (*gandho haıvāsya sugandhıtejanam*)
308 Also see *Maıt Sam* 1 10 4, 3 8 5, *Taıt. Sam* 6 2 8 4, *Aıt Br* 1 28,
309 *Ved. Ind ıı-453.*
310 *Ved pl* 663
311 RV 7 98 1, 9 79.4, 10 94 3 etc *Maıt Sam* 4 8 5 , 2 4 4, *Taıt Sam* 2 1 5 5, *AVS* 5 24 7, 8 7 20, 6 96 1, 8 13 14, 11 8 15, AVP 1 46 1-6, 2 80 1-5, 14 1.19, 15 5 10; SB 3 2 4 1 22, 3 3 1-8, 4 4 2 1, *JB* 1 13,
312 *Gayasphāno amıvahā-RV* 1 91 12
313 See *Ved Ind* ıı-475, *Ved. Pl* 661
314. *Puṣnāmı causadhīh sarvāh somo bhūtvā rasātmkah-Gītā* 15 13
315 *Soma* ıs saıd to resıde ın the earth, the heaven, hılls, plants and water (*RV* 1 91 4,22) No plant can have such character
316 *CS.* Cı 1 4 7, SS Cı 29
317 Aurobındo *The Secret of the Veda*, pp 342-348
318 *RV.* 10 97 7, *Tait Sam.* 4 2 6 3, *AVP* 11 6 10
319 *AVS.* 2 11 1-5, 8 5 1-11, AVP 1 57 1-5, 16 27 1-10, 16.28 1-11, *KSS* 8 15, 39 1
320 *Svadhıtır vanānām-RV* 9 96 6 the word ıs also found ın *RV* 5 32 10, 1 88 2 nowhere Sāyana ınterprets ıt as tree See also Ved Ind ıı 492 GP quotes Roth who takes ıt as a great tree wıth hard wood (*Ved Pl* 662)
321 In *AVS* (1 22 4) however, he takes ıt as a yellow bırd Also *Taıt. Br* 3 7 6 22, 23, *SB* 13 8 1 16
322 *Ved ınd* ıı-499
323 *Ved Pl* 650
324 *Maıt Sam* 4 13 7, 3 11 5, *Taıt Br* 2 6 17 7 (*Hıranyaparnasabdena suvarnaparnayukto daśamaprayājadevo vanaspatıruktah* — Sāyana Hıranyaparnah suvarnapatropetah suvarnasadrśa-jvālopeto vā — Sāyana (*Taıt Br* 3 6 11 2)
325 *RV* 10 16 14, AVS 18 3 60 (*hlādah sukham, tatkārınī hlādıkākhyausadhıh* — Sāyana

4

OBSTETRICS AND GYNECOLOGY IN VEDIC LITERATURE

KM. P.V. TEWARI

Inspite of tremendous advances in the field of science and technology including medicine and era of specialization and superspecialization, the *prasūti-tantra* i e obstetrics and *strī-roga* i e gynecology are yet considered as one subject, because, sizeable conditions are overlapping and conditions of one influence the other, such as severe P P.H or puerperal sepsis may produce amenorrhoea or infertility and fibroid uterus may influence the maintenance of pregnancy and its delivery.

The word *prasūti-tantra* is derived from '*prasūti*' (*Sūṅ prāni-prasave* or *sūṅ prasave*) i e 'delivery' and 'tantra' (*tanu vistāre*) i e 'details' or the branch which deals in detail the whole process of delivery of an offspring is known as *prasūti-tantra,* however, in practice, not only delivery of child, but the care of the mother from the day of conception, its delivery and puerperium all are considered under this speciality

Though the word *strī* also relates to her capacity of fertilization and maintenance of *pregnancy (styāyati garbho asyām),* however, in practice the diseases peculiar to non-pregnant female generative tract are considered under *strī-roga* i e gynecology

The subject of *prasūti-tantra* and *strī-roga* is dealt under *kaumāra-bhrtya,* one of the eight branches of āyurveda The child being pivot, entire physiopathology of woman has revolved around it

Procreation for continuation of one's own race is inherent desire and to care, protect, help and assist during delivery a natural instinct, thus, even a male ape tries to offer all assistance to its female during delivery

According to Indian philosophy, reproduction is not merely a physiological function, rather social obligation to be fulfilled by the couple, a religious ritual to be observed during *grhasthāsrama* Naturally the practice of this branch is closely inter-woven with social and religious customs and the texts of sociology and religion are flooded with the matter related to this branch Thus, it is imperative to see the texts on related subjects to have exact idea about the status of this subject in ancient India

Vedic Saṃhitās

The vedas considered to be the first written record of Indian literature contain innumerable references

The words *bhamsas*[1], *bhasad*[2], *upastha*[3] and *yoni*[4], refer to female generative tract specially vulva, vagina and uterus and the word *gavīnī*[5] to fallopian tubes

The woman is considered as field[6], seat of retas is *vrsana*[7], *sūkra* is *vīrya* and centre of strength of man[8], at the time of coitus the *śukra* situated in whole body is activated[9], and through urinary organ of male comes to the *yoni* of female[10], resulting into *garbha* covered with *jarāyu* and *ulba*[11], or the *yoni* is actual place of progeny[12] Thus the man sows the seeds in yoni[13], specially healthy *yoni*[14] The references of *rtukāla* (most fertile period, the few days preceding ovulation and ovulation) of woman[15] are also available The preparation of *yoni* (reproductive organs) before deposition of *vīrya* to make it capable of achieving conception i e. fertilization, maintenance and nourishment of embryo is described.[16]

The word *ārtava* is used for joining period of two seasons[17a] and probably due to presence of *ṛtukāla* in woman, the word *ārtava* has been used in *Āyurvedic* classics to denote various physiological substances of menstrual cycle

The beautiful girl wearing ornaments was advised to select her husband, in other words, marriage was done in mature age [17b]

For achievement of conception happiness or good psychology of woman[18] and presence of *agni* and *soma*, both principles[19], is considered important It is advised that only physically and psychologically fit and healthy woman should have the coitus [20] For high quality of procreation importance of nutrition or health was recognised [21] The concept of ātman after leaving its previous abode descending to *garbha* on the basis of deeds of previous life[22] is given Certain oblations to achieve *garbha*[23a] then to protect and maintain it properly[23b] are mentioned The desire to have male child was dominant[24a] as it was thought that progeny makes one immortal[24b] The *asvattha* grown over a *śamī* tree and other methods were used for *pumsavana-karma* [25] For proper growth and development of fetus drugs were prescribed [26]

The description of nourishment of fetus from the mother[27] specially through *nābhi*[28] is available *Nābhi* is considered as *posaka* and *prāna-dhāraka* i e supplying nourishment to sustain life [29] For proper nourishment of fetus, the mother was advised to take milk etc in diet [30] That *ulba* (vernix caseosa) offers protection to the fetus and *jarāyu* (chorion and amnion or placenta) gives a shining appearance or adorns the fetus[31] etc is given as a metaphorical description

The drugs to protect the pregnant woman[32] and pacifications not to have twins[33] are given

The infective organisms i e *rāksasas* and *krimis* living in dwelling place, kitchen etc attack the pregnant or puerperal woman[34] and are destroyed by sun-rays[35] These are given various names according to shape and size[36] The *durnāmā* causes even ascending or descending infection[37] These *durnāmā*, *amīvā*, etc *krimis* reaching *yoni* and *garbhāśaya* (uterus), trouble the pregnant woman, cause abortion, trouble to the fetus, still births, and neonatal deaths [38] These can be destroyed with drugs,[39] specially use of *baja* or *pinga* (yellow mustard) to ward-off these is highly praised [40]

The pregnant woman is advised to tie two *pinga* for protection of fetus.[41] *Pṛśniparṇī* is a drug of choice to treat embryo-eating *kaṇvas*.[42] These *rākṣasas* trouble the woman during puerperium.[43]

The unmarried girls used to get themselves aborted,[44a] the person inducing abortion was punished[44b] and the god *pūsan* was propitiated to relieve him of this sin [45] To prevent premature birth the garland or thread already enchanted with hymns (*Pratisara*) was tied to the pregnant woman [46]

The process of labour attracted the attention of these *rsis* to a great extent. Good details of mechanism and management of labour are available in vedas specially the *Atharvaveda.*

Even during those days tenth month was considered as best period for labour.[47]

The importance of the role of *vāyu* in accomplishing the delivery was recognised.[48] The descent of fetus by its movements,[49] pain in abdomen during labour,[50] the *garbha* being made *avāñmukha* (down-faced) by *viśkali* or *prasūti-māruta*[51] or internal rotation of fetus by propelling forces, relaxation of joints (pelvic joints) for easy delivery[52], tearing of *jarāyu*[53] or artificial rupture of membrane, dilatation or ironing of vagina[54] to assist in delivery and surgical interference for delivery of child[55] are described It was known that *jarāyu* (placenta) is not attached to *māmsa, medas* or *majjā,* rather has a superficial attachment [56] Expulsion of *jarāyu* with fetus was always desired [57] The delivery of healthy unharmed child by alive healthy mother was cherished [58] To relieve abnormalities of labour or puerperal disorders certain oblations and other practices were prevalent [59]

Amongst various conditions of *strī-roga* (gynecology) infections of reproductive system and infertility received greater attention

The eradication of *krimis* or *rāksasas* is advised, who enter the *garbhāśaya* (uterus) and cause infertility[60] or destruct the *yoni*[61] or reach reproductive organs and cause trouble [62] *Pinga* (yellow mustard) is prescribed for treatment of these *krimis* [63] *Yaksma* of *bhamsas* or *yoni, śroni* and *gavīnī,* even ascending infection of *yaksmā* from *ūru* (thighs) to *gavīnī*[64] is described

Amongst various causes of infertility (*vandhyatva*) curses of *vaśā*[65] and influence of these *krimis* or *rāksasa* as mentioned above are also included Blessing of *vaśā* can make a woman fertile [66] Gods *Savitā, Dhātā,* etc are prayed for achievement of *garbha* in the *gavīnis* [67] Lord Indra[68], *agni, brāhmanas* and other gods are also prayed for the same purpose [69] Various drugs to treat infertility[70] specially *apāmārga*[71] and amulet of *udumbara*[72] are prescribed *Pinga* (yellow mustard) is specially prescribed to treat infertility caused by *krimis* [73]

Reference of continuous bleedings from *rajovahasirās* of woman[74] (*pradara*)[75] i e menometrorrhagia is available For treatment of female frigidity various measures including drugs are prescribed [76] The mantras or prayers to cause marital disharmony specially for co-wife or enemy are given [77]

Methods of male and female contraception are available The man is made impotent or infertile by use of drugs (anti-spermatogenics) or by crushing his two *nāḍīs*[78] (vasectomy) The drugs or *mantras* to make a woman infertile,[79] obstruction of thousands of vessels by stone[80] (I U D.) and making *yoni* incapable of receiving *garbha*[81] (anti-implantation agents) are the methods advised for woman

Brāhmaṇas

These texts dealing mainly with various religious and social rituals specially sacrificial ones, have described the subject mostly in indirect or metaphorical way The words *yoni*[82] or *upastha*[83] are used for internal and external female generative tract and *śiśna*[84] for penis *Yoni* is situated in middle part of body below the *udara* (abdomen) and is attached to abdomen by *māṃsa*[85] (flesh) Retas (male ejaculate) is **prāna** (life), it precedes the purusa[86], is formed from the whole body[87]; however, main location is *vṛsaṇa*[88] (testicles), it is white and liquid, is cast silently[89] and is essence of food[90] (the concept of *śukra* as seventh or last *dhātu* is given in Āyurvedic classics) In young and old age the *retas* is liquid like water, is not productive and can not be discharged, but in middle age it is productive[91] (good spermatogenesis is seen during middle age).

The procedure to select marriageable girl or boy is given[92] Varuṇa is god of conjugal relations[93] and *agni* is said to be agent of sexual union [94] The coition for the sake of impregnation was considered as pious or religious act[95] by which the father is reborn as son [96] Reproduction is achieved by coupling, in this process the man deposits *retas*,[97] which disappears in female reproductive system and gets[98] mixed (with female component). The retas is most important for impregnation.[99]

The reference of a girl not having her menarche,[100] having normal growth of public hair or secondary sex characters[101], importance of *rtumatī* woman[102] (the woman during her *ṛtukāla* i e proliferative phase with ovulation) for conception and best position of both partners at the time of coitus[103] are mentioned

The *retas* (seed) which is shed is implanted in *yoni*,[104] *soma* infuses *prāna* or life in it, so it grows and in its absence it becomes putrid[105] (importance of *prāna* or oxygen in the development/growth of zygote, in absence of which it dies) Thus *vāyu* is actually transformer of this seed,[106] *agni* imparts growth by making its lump and *vāyu* gives movements and makes it hard [107] Thus *garbha* (embryo) grows in *yoni* for being born [108] All the body parts of embryo are present in retas (seed) in subtle form,[109] thus the characters of off-spring depend upon the quality of seed [110] Psychosocial status of couple specially prevailing at the time of coitus influences the psychological make-up of the future offspring[111] so the normalcy of psychology was given very high importance Certain oblations were offered to get a male child [112]

All the body parts of embryo do not develop simultaneously, rather develop one after the other, thus the embryo sleeping inside the *yoni* (womb) grows[113] properly, as it is protected here [114] The *Yoni* does not injure the embryo [115] Corresponding to the growth of embryo, the womb also increases in size, however, sometimes the embryo may be smaller or larger[116] (this description can be considered an indirect reference of intra-uterine-growth retardation of fetus, over-sized fetus and cephalo-pelvic

disproportion) The embryo is covered with *ulba* (vernix caseosa) and *jarāyu* (amnion and chorion both together), *jarāyu* is above the ulba, both these protect the embryo[117] which stays in universely flexed attitude[118] in womb and moves inside it [119] Indirect reference for liquor-amni is also available[120] (*ulba* used for irrigation may be considered liquor-amni).

Oblations with recitation of various *mantras,* use of properly consecrated red *śali* rice cooked in the milk of red cow having calf of similar colour, during *rohinī nakṣatra* or black *ṣaṣṭika* rice, cooked in the milk of black cow having calf of similar colour on *pañcamī* of first fortnight of lunar month or *ghṛta* filled in ewer by the couple provides them handsome son of good longevity.[121] The persons desirous of having vigorous son should not eat in the presence of their wives.[122]

Congenital abnormalities may occur due to use of cow's flesh,[123] abnormalities of *retas,*[124] influence of *rākṣas*[125] (infections such as rubella) or other unknown causes [126]

The embroys are protected by *āditya* and *marut,*[127] in other words, abnormalities of *vāyu* can cause abortion Negligence in various rituals can initiate abortion,[128] the delivery of fetus in fifth or sixth month is termed as *srāva,*[129] Amulet made with leafbuds of *nyagrodha* and root of *śara,* tied in waist of female during third month of pregnancy alongwith other oblations prevents repeated neo-natal deaths and the woman delivers a male child [130] Butter is said to be beneficial to the fetus.[131] The importance of vitamins was recognised as sprouts of barley containing Vit E are said to be good for strength, reproduction and progeny [132] Induction of abortion was considered a sin [133] Reference of twins,[134] triplets[135] and intrauterine death[136] of fetus are also available

Though majority of references regarding labour are related to cow and birth of calf, these can be considered for human being also Normal intra-uterine stay of fetus is said to be of ten to twelve months after which spontaneous delivery takes place [137] The labour is associated with pain,[138] during labour the head of the fetus is the lowest and *śira* (occiput) is born first [139] The fetus comes out by rupturing *jarāyu* (fetal membrane) and with *ulba* and *jarāyu*[140] (placenta) During its exit the *yoni* is dilated, thus, mature fetus delivers from narrow *yoni* without injuring it [141] Indirect reference for anaesthesia[142] during labour, some surgical interference to deliver fetus,[143] and its resuscitation by mouth to mouth respiration[144] are also available The first pregnancy is often followed by the second one [145]

Procreation being intense desire, failure to achieve this i e infertility has also been described The infertility develops due to diseases or abnormality of *yoni*[146] (female reproductive organs), negligence in oblations or rituals[147], disruption in flow of discharge of *retas* (continuous, uninterrupted flow is essential for conception)[148] and other abnormalities of *retas* [149] The woman seized with *Nirṛti* also becomes infertile [150] To get rid of this problem, prayers to the *yūpa* (central pillar of the place of sacrifice) made of *bilva,*[151] gods specially *Savitā,*[152] various sacrifices to make *retas* capable of impregnation[153] and prayers to remove male frigidity[154] etc are recommended Use of certain *mantras* to cause absence of *vīrya* (spermatic fluid) in a man[155] (enemy) may be considered as an indirect reference for contraception

Upaniṣads

Marriage with an *ātikī* (the girl without secondary sex characteristics) was also done.[156]

The words '*Upastha*' and '*muṣka*' are used to denote *vulva* alongwith vagina and labia majora respectively [157]

The specific mode of life to be observed by the woman during three days of menstruation followed by bath, wearing of clean intact garments and pestling of paddy[158] (this pestling is not advised in Āyurvedic classics) and the importance of *ṛtukāla* for achievement of conception are described.[159] The instinct to reproduce initiates the desire of coitus [160] The *puruṣa* remains in the *retas* (sperms) of male as *garbha*[161] or the *prajāpati* enters the zygote through *śukra* (semen) in the form of *prāṇa* (life)[162] or the *prāna* is born from *ātmā* [163]

The *tejas* i e essence of body[164] situated in whole body of man,[165] comes to *śiśna* (penis),[166] discharged and deposited in the female,[167] and with the union of *śukra* (sperm) and *śonita* (ovum) the *garbha* is formed [168] The *retas* coming through the coitus is responsible for birth of progeny,[169] with this chain the father is born as son.[170] For purification of *upastha* (female reproductive system), penis and semen specific oblation[171] and for seminal discharge expiation[172] are prescribed The forces of *āditya* hold the embryo in its proper place and prevent it from falling down [173] The fetus being similar to the mother does not cause trouble to her [174]

To command the love of woman, to have the desired offspring and not to have conception (contraception) certain breath exercises were practised [175] Specific rituals or worships and hymns i e *putrakāmesti yajña* and *garbhādhāna-samskāra* were performed before attempting to have an offspring [176] The fate of the persons not believing in these *samskāras* was considered as doubtful [177]

The development of embryo/fetus is described in much detail After fertilization, this fertilized egg becomes *kalala* (morula) in one night, *budbuda* (blastocyst) in seven nights, *pinda* (collapse of blastocyst for implantation) in fifteen days and solid in one month. In two, three and four months, head, lower extremities and calf muscle alongwith abdomen and sacral region develop respectively In fifth month, the *prsṭha-vamśa* (spinal-cord can be detected radiologically in this month) and in sixth month the mouth, nose, eyes and ears (in sixth month eye-lids separate) develop It becomes associated with life in seventh month (the born child can survive in outer world) By eighth month it has matured with all the features The birth of male or female is due to dominance of *retas* of father or mother respectively, if both are equal a harmaphrodite is born The importance of normal psychology of woman was emphasised as psychological abnormality of mother can give birth to a blind, bald, dwarf, hump-backed child Twins are born due to division of zygote by *vāyu* The functions of *pañcamahābhūtas* in the development of embryo are also described[178] as given hereunder

Mahābhūta	Character	Function in embryogenesis
Pṛthvī	Solid or hard	*Dhāraṇa* (retention, sustenance and maintenance)
Jala	Liquid	*Piṇḍīkaraṇa* (solidification)
Tejas	Heat	*Prakāśana* (manifestation)
Vāyu	*Sañcāra*	*Vyūhana* (division)
Ākāśa	*Susira*	*Avakāśa-pradāna* (vacuum formation)

The importance of nourishment to the fetus given by the pregnant woman through her pure food and drinks was recognised.[179]

Dietetics, mode of life and worships to have fair, dark or yellow complexioned child, erudite son or daughter are prescribed, the dietetic regimen was to be observed by both partners, not only by the woman. The details of specific diet as well as its effect on the child[180] is given hereunder

	Diet	*Effect on the child*
1.	Rice cooked with milk and sweetened, then mixed with *ghṛta* (both partners)	Fair-complexioned son, with longevity of hundred years and will study one veda
2.	Cooked rice with curd and *ghrta* (both partners)	Tawny or yellowish complexion, longevity of hundred years and will study two vedas
3.	Cooked rice with *ghṛta* (only woman)	Dark complexion, red eyes, learning three vedas, longevity of hundred years
4.	Rice cooked with *tila* and mixed with *ghṛta* (only woman)	Erudite daughter with hundred years life
5	Pulp of medicine *uksa* and *rsabha* with rice and *ghrta* (both partners)	Erudite bold son with pleasing sweet voice, learning all vedas, longevity of hundred years

Destruction of fetus was considered as sin [181] Ninth,[182] tenth,[183] or twelfth and thirteen[184] months were considered as normal period of labour The words *jarāyu* and *ulba* in relation to transformation of *asat* to *sat*[185] and *sosyati* and *asosta* for expectant and delivered woman respectively[186] are used

In expulsion of child, importance of *vāyu,* use of certain *hymns,* delivery of *jarāyu* (placenta) with child[187] are mentioned The fetus remembers its past life till ninth month of pregnancy, however, during process of expulsion, due to trouble caused by compression in the generative passage, it loses this memory [188] Procreation is described [189] and prayers to make her fertile were offered [190]

Kalpa-sūtras

In *Dharma-sūtras,* the woman during menstrual period was considered as untouchable and the students were advised not to talk to her [191] Early marriage was prevalant, as the girl in the stage of *nagnikā* (8 to 10 years) or *gaurī* (10 to 12 years, but before menarche) or before attaining maturity[192] and younger to her husband was married,[193] however, the man could remain celebrate upto forty eight years of age.[194] Qualities of girl were examined very carefully The girl not belonging to one's own *gotra* or *pravara* and *gotra* of maternal side, but belonging to one's *varna* (caste), having all body parts properly formed, delicate and intact, small body-hair, small and beautiful teeth, balanced gait like that of swan or elephant, excellent nature and health was considered suitable, while the girl having yellow hair and eyes, extra or deficient body-parts and garrulous was labelled unfit for marriage [195] After marriage, one was advised to enter *grhasthāśrama*[196] and have coitus, wearing specific garments named *strīvāsas,*[197] either during *rtukāla* or afterwards[198] only for procreation,[199] the coitus was contra-indicated during day time[200] or menstruation.[201] The couple was advised to touch (wash their genitalia with) water after coitus [202] To have male or female child, the woman should have coitus on even or odd days respectively after taking bath on fourth day of menstruation and anointing her body [203]

Father is reborn as son [204] Great importance to general health of couple, physical and psychological normalcy was given as it is said that only parents provide body to the offspring,[205] special qualities i e body-complexion, intellect, strength, energy etc depend upon deeds and qualities of parents as well as deeds of previous life [206] The offspring inherits the character of person whom-so-ever the woman sees after taking bath on fourth day of menstrual period, thus, she should see her husband only [207]

The female was considered as field and the man in possession of seed [208] Various *samskāras* were considered important, because as a seed of any plant sowed in properly purified and refined field yields good crops, similarly impregnation done after proper *saṃskāras* results in offspring of high qualities or else the born child may have certain abnormalities [209] *Rtu-saṅgamana, caturthīkarma, niseka* or *garbhādhāna* for making the embryo stable and strong,[210] *utthāna* for growth of embryo,[211] *sīmantonnayana* in sixth or eighth month of pregnancy[212] and *visnu-bali* in eighth month to make the embryo trouble-free and other protection during delivery were[213] practised Some of the authors advised practice of *rtu-saṅgamana* or *niseka* just before coitus and *garbhādhāna* immediately after that [214] The days on which purifying rituals are done influence the sex and qualities of child i e if the sacrifices or rituals are done on first, third and firth, second or thirteenth day of latter half of month, the couple would have female children, male child, male child who would be thief and good number of handsome but short-lived male children[215] respectively

Induction of abortion was considered as evil-deed or sin and the person inducing the abortion was cursed [216]

The pregnant woman was advised to take food first,[217] lest her health is affected

Infertility was considered as stigma, because the husband of infertile woman was permitted to re-marry [218] The charity and service to the guest was considered a method to obtain offspring [219] The wife of an impotent or infertile man was permitted to have marital relations with a man of the *gotra* of her husband to get a child,[220] (probably with the idea of having almost similar genetic pattern in the male partner of the same family)

Gṛhya-sūtras, the text of sociology also contain considerable details of this speciality. Marriage with a *nagnikā*[221] or a girl of ten or twelve years of age[222] was advised The girl to be married should be of different *gotra* and possess good qualities and health,[223] A very typical method for selecting the girl with the help of clod of earth, loose earth, different kind of seeds mixed together[224] is also available. Coitus was contra-indicated during first three nights of menstruation,[225] specific mode of life, salt-free diet, rich in curd and boiled rice is prescribed to be taken not only by wife but by husband as well[226] during first three days of menstruation

After performing specific ritual or *caturthī-karma*[227] when the menstrual bleeding has ceased, coitus should be done[228] on each following night with an even number from fourth till sixteenth brings excellent offspring [229] This indicates that *ṛtukāla* is of sixteen days

Garbhādhāna-saṃskāra is to be done with hymns and oblation,[230] the drug *adhyaṇḍā*[231] is also to be used There exists great divergence of opinion about the period of *puṃsavana-karma* as it is said to be done in second or third month of pregnancy before quivering,[232] when the pregnancy has become visible,[233] third[234] or seventh or eighth month[235] of pregnancy Detailed procedure of *puṃsavana-karma* with the use of drugs i e , shoot and leaf-buds of *nyagrodha, kuśa-kantaka, somāṃśu*, barley, mustard, beans, cow's curd in given [236] The method to get a valiant son is also available [237]

Garbha-rakṣaṇa or *anavalobhana-saṃskāra* for protecting fetus was done in fourth month of pregnancy,[238] specific ritual to prevent miscarriage is also prescribed [239]

Sīmantonnayana-saṃskāra or *karma* is advised to be done only in first pregnancy during third,[240] fourth,[241] fourth, sixth or eighth,[242] sixth or eighth,[243] fourth or sixth[244] or seventh month[245] of pregnancy In detailed procedure of this *saṃskāra* young unripe fruits of *udumbara, darbha, vīratara, triśveta, śallakī-kaṇṭaka, śamī, palāśa* etc are included [246]

Normal period of labour is said to be tenth month [247] The paste of roots of *kākātanī, macakacātanī, kośātakī, bṛhatī* and *kālaklītaka* was applied in accouchement-room to ward-off *rākṣasas*[248] indicating that vulnerability of any infection during parturition was recognised *Śoṣyantī-karma* or *homa* or *kṣipra-prasavana* was done in tenth month or even before,[249] when fetus has reached near *basti* or urinary bladder,[250] or at the time of labour,[251] it causes easy expulsion of fetus,[252] alongwith fetus expulsion of placenta occurs [253] *Tūryanti* is used in the process of *kṣipraprasvana-karma* [254]

To achieve the conception by an infertile woman, instillation in right nostril of the juice of the root of white-flowered *brhatī*, uprooted during *puṣya-nakṣatra*, is prescribed [255]

In conclusion, it can be said that the entire vedic literature is full of the ideas and facts relating to obstetrics and gynecology which guided the development of the subjects in post-vedic era.

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233 *Ap Gr* VI 14 9
234 *Go Gr* II 6 1, *As Gr* I 13 2, *Hı Gr* II 1 2 1,2, *Sank Gr* I 20 1, *Kha Gr* II.1 17
235 *Kath Gr* II 8 1,2
236 *Go Gr* II 6 2,3, 6-11, *Pa Gr* I 14 3 4, *Kha Gr* II 1 18-23, *As Gr.* I 13 2-7, *Hı Gr* II.1 2 2-4, *Kath Gr* III 8 3, *Sank Gr* I 20 2, *Ap Gr* VI 14 10
237 *Pa Gr* I 14 5
238 *Sank Gr* I 21 1-3, *As Gr* I 13 1
239 *Hı Gr* II 1 2 7
240 *Kath Gr* III 7 1
241 *As Gr* I 14 1, *Hı Gr* II 1 1 1,2, *Ap Gr* VI 14 1
242 *Go Gr* II 7 1,2
243 *Pa Gr* I 15 1-3
244 *Kha Gr* II 1 24
245 *Sank Gr* 1 22 1
246 *Go Gr* II 7 3-12, *Pa Gr* I 15 4-8, *Kha Gr* II 1 25-27, *Ka Gr* III 7 2-6, *Sank Gr* I 22 2-17, *As Gr* I 14 2-9, *Hı Gr* II 1 1 2,3, *Ap Gr* VI 14 2-8
247 *Kath Gr* III 8 3
248 *Sank Gr* I 23 1
249 *Pa Gr* I 16 1
250 *Go Gr* II 7 13-16, *Kha Gr* II 1 29-32
251 *Kath. Gr* III 9 1-3
252 *Ap. Gr* VI 14 13,14, *Hı Gr* II 1 2 8
253 *Hı Gr* II 1 3 1, *Pa Gr* I 16 2, *Ap Gr* VI 14 15
254 *Hı Gr* II 1 2 8, *Ap Gr* VI 14 14
255 *Pa Gr* I 13 1

SECTION III

POST-VEDIC

5

MEDICAL DATA IN EPICS AND PURĀṆAS

P.V. SHARMA

The two great epics, The *Rāmāyaṇa* and the *Mahābhārata*, and the *Purāṇas* are valuable treasures and records of Indian culture which, because of their encyclopaedic character, contain a lot of information on medicine prevalent in those days Though the exercise of the scholars for deciding the dates of these documents has almost been futile, yet their importance in reflecting the light of informations with regard to ancient medicine does not diminish in any way

Vālmīki's *Rāmāyaṇa* is based on the story of *Rāma*. It is assumed that the story was popular among the people and was sung as ballad poetry which was later on composed in Sanskrit verses by Vālmiki [1] It is also maintained that the original text contained only cantos 2-6 and the first and the last chapters found in the present form are later additions [2] Macdonell has discussed the date of this epic and has come to the conclusion that it has pre-Buddhistic origin and the kernel of the Rāmāyana was composed before 500 B C , while the more recent portions were probably not added till the second cent B.C and later The main arguments for this are as follows

1. The story of Rāma is found in one of the *jātakas, Daśaratha jātaka* A verse from the old part of the *Rāmāyana* (6 128) occurs in Pali form embedded in the prose of this *jātaka*

2. There is no mention of Pātaliputra which by the time of Megasthenes 300 B.C) had become the capital of India

3. Similarly, the capital of Kośala is regularly called Ayodhyā, while the Buddhists, Jainas, Greeks and Patañjali always give it the name of *Sāketa* Again in the last canto there is mention of the capital having been transferred to Śrāvastī Thus the *Rāmāyana* was composed before all these changes took place

4. Linguistic evidence too places this work before Pānini (500 B C) because of a number of deviations from the Pāninian standard

As regards the relation of the *Rāmāyana* with the *Mahābhārata*, the former is definitely anterior to the latter The original part of the *Rāmāyana* appears to have been completed at a time when the epic kernel of the *Mahābhārata* had not as yet assumed definite shape. For, while the heroes of the latter are not mentioned in the *Rāmāyaṇa*, the episode of Rāma (*Ramopākhyāna*) is there is the longer epic [3]

Winternitz, however, takes a different view. He says that when the Tripitaka came into being there were ballads dealing with Rāma but no Rāma-epic. Hence the *Rāmāyaṇa* was composed only after the appearance of the Buddha and of the birth of the oldest Pali-literature i.e. after the 5th cent. B.C. He sees Buddhist undercurrents in the character of Rāma. He also holds that though the present *Rāmāyana* is older than the present *Mahābhārata* (If the *Mahābhārata* had on the whole its present form even as early as in the 4th cent. A.D. then the *Rāmāyaṇa* must have been completed already at least one or two centuries before this) originally the latter is earlier than the former which is evident from the fact that the allusions to Vāsudeva, Arjuna and Yudhiṣthira already occur in Pāṇini's grammer whereas Rāma is not mentioned either by Pānini or Patañjali nor in the inscriptions of the pre-Christian era. Thus it can be inferred that the period of growth of the *Rāmāyaṇa* falls within the longer period of growth of the *Mahābhārata*. In conclusion, the *Rāmāyaṇa* was composed by Vālmīki in the 4th or 3rd cent. B.C. and was completed towards the end of the 2nd cent. A.D [4]

Traditional view is that Rāma was in *Tretā Yuga* and Vālmīki, a contemporary of Rāma, composed the *Rāmāyaṇa* in that very age and as such is anterior to the Mahābhārata, an epic of the succedding Dvāpara age. The *Ramchandra period,* according to this view, is C.2350-1950 B.C.[5]

If we take a middle view, the original *Rāmāyaṇa* may be placed in pre-Pāṇinian period

As regards medicine, the first great change noticed in the Rāmāyana is the emergence of Dhanvantari as personified Āyurveda[6] and later on as god of Health[7] who replaced the vedic twin god physicians Aśvins reducing them only as handsome faces.[8] It indicates the established position of Āyurveda and the regard which the people had towards it. The word 'Vaidya' was generally used in the sense of learned but was being transferred gradually to denote physician [9]

It also seems that by this time the basic concepts of Āyurveda were rationally established and the *Āyurveda* which was divided long back into eight branches[10] was again being converted into a composite whole comprising all the branches, the movement culminating in appearance of the *Aṣṭāngahrdaya* The Vedic Aśvins represented the fragmentation of Āyurveda in specialities themselves symbolising the two chief specialities of medicine and surgery (the samhitās of Caraka and Suśruta are their representatives) whereas Dhanvantari assimilated all the knowledge in one This was perhaps necessitated by establishment of hospitals and dispensaries and consequent rise of the general physician who could cater to the alround medical needs of the people

Soma which was symbolical in Vedic age was deified to denote moon [11]

Physiological functions and pathological syndromes caused by *dosas* were clearly defined and were commonly known Among the three *doṣas, vāyu* was given the highest position because of its immense power and movement and because of this it was

also called *'deva'*[12] *'bhagawān* [13] An entire chapter is devoted to it in ancient samhitās of Caraka and Bhela. In *Rāmāyana* the pathological effects caused by aggravated *vāyu* are allegorically described as (1) deformities in body[14] (2) obstruction in passage of urine and faces (3) Respiratory distress and (4) pain and immobility in joints [15] At the end, the importance of *vāyu* in maintenance of health and life is stated [16] The use of technical terms *'prakopa'*[17] and *'kupita'*[18] indicates that the entire idea has been taken from the then existing samhitās of Āyurveda [19]

The simple facts of the Vedas are allegorically and in personified form presented in epics and purānas An instance of this is the case of transplanation of testicles of sheep to Indra by Pitrs on request from maruts.[20] This is, in fact, the extension of the vedic verse *'Vrsne te harī vrsana yunajmi'* (*RV* 7 19 6) Attributes like *nidrā* and *prabhāva* are also personified (III (56(a) 8-9) IV 31 42-43)

Though this is not found in Āyurvedic texts, the method of preservation of the dead body in oil tub was popular at that time [21]

Susena, the physician-surgeon accompanying Rāma in his military expedition[22] treated Rāma, Laksmana and other injured soldiers medically as well as surgically [23] For this, he applied some herbs having miraculus powers, the main four were *mrtasañjīvanī, viśalyakaraṇī, savarnakaraṇī* and *sandhānī.*[24]

Apart from the above main herbs, a number of plants are mentioned in the *Rāmāyana* in different contexts like description of forests, hermitages, seasons etc [25] One of the peculiar plant is *'nīlāśoka'*[26] Botanically *Aśoka* is well identified and is very commonly known but what plant is meant by *nīlāśoka* is not clear because *Aśoka (saraca indica)* has no any blue variety It is also a noteworthy fact that the word *Kāñcanāra* does not appear anywhere in the text[27] though *Kovidāra*[28] is there *Kovidāra* was used as flag in chariots [29] *Iṅgudī (Balanites aegyptiaca)* was a common tree in Vindhya region under which *Rāma* set his camp [30] Sthagara, probably an aromatic plant is mentioned along with Kuṣtha while describing citrakūta [31]

The word *'Jvara'* is generally used in the sense of 'distress' but in certain contexts it denotes fever [32]

The simile of lac given to blood reminds the same in CS (*SU* 24 22)

At one place (V 28 6), there is mention, as a simile, of the operative surgery performed in case of obstructed labour [33] It indicates that this was in practice at the time

Mahābhārata

Mahābhārata, in the present form, is an encyclopaedic work which has developed in a long course of time Initially it was *'jaya'*, then *'Bhārata'* and lastly *'mahābhārata'* containing 8800,24000 and 1 lac verses respectively [34] This

development took centuries in which various materials-legends and stories-were added to it which gave it the present (big) size. Its greatness lies not only in its size but also in the valuable contents.[35]

As it has developed in centuries, it is difficult to decide the exact date of the *Mahābhārata.* There is an inscription in a land grant dating from A D 462 which proves that the epic at about A.D. 500 was practically of the same length (1 lac verses) as it is mentioned in the beginning of the text. Thus it has acquired this character at least a century earlier i.e. by about 350 A D. As regards the upper limit, the historical germ of the great epic may be traced not earlier than 10th Cent B C The original form of the epic came into being at about 5th Cent. B C.[36]

Winternitz decides its date as between 4th cent B C. and 4th cent. A D [37]

Indian tradition puts the Krishna period as c 1950-1400 B C when the episodes of Mahābhārata took place.[38] In c 1400 B C Bhārata war was held which declared the end of Dvāpara age Vyāsa wrote the epic at that time

In Pāṇini, there is mention of Vāsudeva, Arjuna and Yudhisthira which indicates the existence of the epic before Pāṇini On this ground, *Mahābhārata* may be placed in the pre-pāṇinian period.

In *Mahābhārata,* there are references of Ātreya[39] (Krsnātreya)[40], Divodāsa[41] and Nagnajit[42] which proves that these names were quite familiar in the society and which pre-supposes the existence of the respective Āyurvedic compendia[43] at least in the initial form composed by Agniveśa, Suśruta and Bhela after collecting and arranging the instructions of the above sages It may be noted that Agniveśa and Bhela were two of the six disciples of Ātreya[44], Suśruta was the disciple of Divodāsa[45] and Nagnajit was the king of Gāndhāra and patron of Bhela[46] who refers him in his treatise

Aśvins are referred to for their medical and surgical skills more often[47] than in the *Rāmāyana* but this seems to be repetition of the Vedic legends Among them is also the legend of Cyavana[48] who helped Aśvins to get their claim at sacrifices along with other gods. Still Aśvins are declared as śūdra[49] because they were engaged in disgusting works This indicates that, though medical profession was regarded as pious[50], the physicians due to their professional exploitation were looked down upon by the society (Even in vedic age, physician was one of the victims for *purusamedha)* There is also mention of their social boycott as eating in physician's house was prohibited [51] that particularly towards surgeons the society's attitude was not congenial is evident from the statement that physician's food is pus[52], physicians were not to be taken as witness [53] Aśvins were handsome and Nakula and Sahadeva born of them in Mādrī were also good-looking They were also experts in medicine though they specialised in veterinary medicine one in that relating to horses and the other of cows[54], the offering of Soma to Aśvins by Cyavana[55] (in the above legend) in spite of opposition from Indra shows that medicine was fully established by that time

The word '*Vaidya*' is used in the sense of 'learned'[56] and in this sense has been

used as epithet with '*cikitsaka*' (physician) as well as '*śalyoddharanakovida*'[57] (surgeon) But its restricted use in the sense of physician is also seen [58] Perhaps this was the stage of transition It also means that physicians were mostly learned *Vaidyas* coming from a traditionally good family were preferred [59]

Apart from medicine and surgery, other specialities of Āyurveda were also prevalent The discourse between *takṣaka* and *kāśyapa* is evidently proof of the later's expertise in toxicology[60] by which he revived the Banyan tree which was reduced to ashes by *Takṣaka, the king of serpents*[61] *Rasāyana* is already defined in the legend of Cyavana, the legend relating to Skanda and his attached women (*Matrs*) and *grahas* point to the status of pediatrics[62], the instances of other specialities are also found here and there However, there were scholars who knew Āyurveda on the whole (Āyurveda-Vit) [63] A beautician (*sairandhrī*) is figured in Draupadi disguished as *Mālinī* in the palace of *Virāta* She knew hair-dressing and cosmetics [64]

Basic concepts of Āyurveda such as *pañcabhūta*[65] and *Tridosa* have been lucidly described Once it is said that the five *Pandavas* on chariot looked like five *bhūtas.*[66] Likewise, Krsna says that people call him *Tridhātu* as the support and death of living body depends on the combination of three *dhātus vāyu, pitta* and *ślesmā* [67] Five products of each *bhūta* in the body are enumerated. This contains five types of *vāyu* also The five *āgneya* products are just the same as five divisions of pitta [68] Such division of *ślesmā* are not found here which were finalised later and is recorded by *Vāgbhata. Vāyu* has been dealt with more details [69] It is called *pañcakarmā* (having fivefold actions) and *Bhagavān* (having miraculous powers) Body has been defined with essential components [70] In the *Gītā* portion, the two main divisions of diseases-nija (innate) and *āgantu* (accidential or exogenous) along with the three dosas with their main pathological symptom are given though without explicity mentioning them [71] One half-verse in the same portion[72] is exactly the same as in CS except one word '*sanghāta*' which is '*Prayatna*' in CS

The *Agni-soma* concept has been described well in the form of *Prānātman* and *Pākātman* gods [73]

Equilibrium[74] of bodily elements and mental qualities is Health[75] otherwise psychic and somatic diseases arise which are interdependent [76] For health, both '*swastha*' and '*sustha*' are used

Of all the diseases, *jvara* is described in detail with legend about its origin [77] Because of its origin from *Rudra,* it is known as '*māhesvara tejas*' [78] *Jvara* is one of the four attendants of Rudra's chariot [79] Jrmbhikā is allegorically presented which disabled *vrtra* [80] Besides, *ūrustambha*[81], yaksma[82], *twagdosa*[83], *kunakha*[84], *śyāvadat*[85], *unmāda*[86], *śvadamśa*[87] and *Vrana*[88] are mentioned There is also mentions of *maraka roga*[89] (epidemics)

In treatment of diseases, both *mantra* (incantation) and *ausadha* (drug) were used[90] but the latter was gradually establishing its hold Drugs were collected and

preserved in stores along with oil, ghee and honey[91] *Dhūpa* (fumigation) is described as of three types — *niryāsa* (exudation), *sārin* (heartwood) and *krtrima* (artificial), *guggula* and *aguru* were the best ones in the former two groups [92]

There are both *Sivasahasranāma*[93] and *Visnusahasranāma*[94], the latter of the two is intended in the control of the treatment of *jvara* in CS (Ci 3 312)

The expert physician should diagnose the disease after examining various factors (*yathāvidhi*) and then administer the drug for its alleviation [95] Physician has to be kept in the place with due respect and facilities.[96]

While comparing Aśvins with Aṅgiras the former are said as Śūdra while the latter as Brāhmana which indicates the supremacy of *Atharvāṅgirasa* practices, the *Atharvāṅgirasī* śruti has been mentioned as the best one which should be followed wihout any consideration [97]

Existence of life with five *bhūtas* in plants has been proved with reasons.[98]

Vṛkṣa (tree), *gulma* (shrub), *latā* (weak plant) *Vallī* (twinner), *twaksāra* (having tough integument) and *tṛna* (grasses) — these are different forms of plants.[99]

Among plants *Palāśa, tilaka, cūta, campaka, pāribhadra,*[100] *tamāla, tāla, madhūka, nīpa, kadamba, sarja, arjuna, karṇīkāra*[101] etc are mentioned *Plaksa,* Śata[102] *nyagrodha*[103], *śālmali*[104] and Aśvattha[105] were very common Flexibility of vetasa is well described [106] *Kimpāka,* though sweet in taste, is harmful in consequence (*vipāka*).[107] A big tree *kālāmra* is described the juice of which was quite saturating and nourishing. It grew in *bhadrāśva varsa* [108]

There is mention of *soma-vikrayī* which means that there was some plant prevalent in the name of *soma* which was sold in the market [109]

In the *Mahābhārata* many points are observed which put it closer to the *suśruta-samhitā,* the following points are noteworthy —

1 Creation of a scripture having one lac chapters by Svayambhū[110] (creator) resembles the same with regard to SS [111]

2. Description of *adhibhūta, adhyātma* and *adhidaivata* is similar in both [112]

3 Mention of *avyakta* (*Prakrti*) as having *bījadharma* and *prasavadharma* is common in both [113]

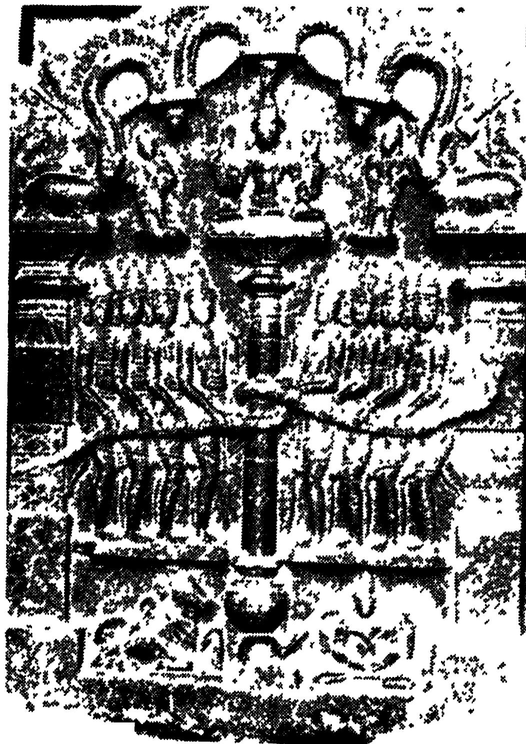
4 A detailed description about Divodāsa who was teacher of Suśruta also points towards that

Purāṇas

Purānas are so called as they described the old traditions.[114] Macdonell thinks them closely connected with and mostly later than the Mahābhārata [115] Winternitz, however, says that earlier Purāṇas, though in their ussence can be traced quite early, they came into being in their present form during 1-7 cent. A D [116] Wilson while discussing the dates of Purānas, takes most of them of late origin [117] Nevertheless, the Purānas contribute a valuable document of Indian culture and throw flood of light on the ideas prevalent in the past.

Purāṇas are eighteen in number Besides, there are upapurānas As this literature is quite extensive, relevant points from only some of the important Purānas are given here.

Brahmapurāṇa — In connection with the destruction of the Daksa's sacrifice, *jvara* (fever) is described in detail and is said to be originated from Rudra's sweat [118] It is also



Churning of Ocean

(Kākatīya Sculpture, 11-13 cent A D)
(Courtesy Indian Institute of History of Medicine, Hyderabad)

distributed in different creatures by different names, *jvara* is a terrible power of Maheśvara (*māheśvara tejas*)[119] *Soma* is described allegorically as husband of herbs [120] The religious importance of *Aśvattha* is highly praised[121]. It is also said that the power of amulets, mantras and herbs is beyond human comprehension[122]

Padmapurāṇa — It enumerates seventeen domestic and fourteen sacrificial herbs which were both cultivated and wild[123] By churning of ocean, Dhanwantari appeared clad in white and bearing the waterport He is said as '*Vaidyarāja*'[124] from which it is evident that Dhanwantari was the symbol of an ideal physician removing disease, decay and death. '*Vaidya*' is used in the sense of physician[125] 'Āyurveda' is mentioned first among the *upavedas* probably because of its attachment to *Ṛgveda*[126]. *Siddha Rasāyana* (providing immortality), *dhātuvāda* (alchemy) and *pādukī* (tantric practices) were also prevalent[127]. Medical treatment, diet and drugs were costly[128]. Yayāti says that though his age is 100 years, he is quite young in body like that of 16 years It was due to the effect of *Rasāyana* (though he says it is *kṛṣnarasāyana*)[129] *Pañcabhūtas*, the basic elements, are mentioned so many times[130] *Vāyu, sūrya* and *soma* represent the three *dhātus* (*doṣas*) — *vāta, pitta* and *kapha.*[131]. *Vāyu* is particularly given prominence. It is said *Pañcātmā* (of five forms) and *vāyudeva* (the god *vāyu*)[132] *Soma* is king of herbs[133] He is mentioned as one of the eight *vasus*[134] Development of foetus and the body thereafter with its decay is described in detail While dealing it some facts of physiology and anatomy are mentioned[135]. Quantity of certain constituents is also given which differs from that in the CS (Sa 7.15)

Śali rice, green gram and sugarcane are said as originated from water [136] Some dietary preparations such as *laḍḍuka, sevaka, samyāva, pūrikā* etc are also mentioned [137]

Disease originates from imbalance of three doṣas[138] etc. *Jvara* is a common disorder [139] Besides, *kuṣtha,*[140] *śvitra,*[141] *śvāsa, kṣaya, asṭhīlā, apasmāra* and *śūla*[142] are mentioned In the context of the worship of the god Sun, a number of diseases are enumerated such as *Kāmalā, Malaria, Aśmarī, vātika* disorder and foetal abnormalities [143] By disregarding the Sun, *Kustha* occurs [144]

Providing help to the diseased was regarded as pious act [145] Budha, Soma's son, has been described as founder of elephant-science and was king of physicians [146] *Jātahārikā* is also mentioned.[147] Preservation of dead body in oil-tub is also found [148]

Plants are mentioned in many contexts [149] *Plaksa* is described as the Chief of the trees [150] In the context of *vrksāropana* (Plantation) too, a number of plants are mentioned [151] *Nygrodha* is exemplified for its extensive growth and *kadali* for its want of heartwood [152] *Tulasī* is given prominence for its important place in *vaiṣṇava* worship[153] and so the glorification and uses of *āmalakī* are described in a separate chapter [154] *Guggulu* is said as the best among incenses [155] So is the importance of *kuśa* There is a group named '*saptakuśa*' which consists of *kuśa, kāśa, dūrvā, yava, vrīhi, balvaja* and *pundarīka* [156]

Matsyapurāṇa — In *Matsyapurāna,* Dhanwantari is said as '*Āyurveda-prajāpati*' (Progenitor of Āyurveda)[157] The ramifications of Āyurvda are also mentioned[158] Apart from *Pañcabhūta, Vāyu* is glorified in detail It is said as divided into five and residing in seven *dhātus* in men[159] In fact, *vāyu* is *āyus* (life) of all the beings.[160] The ideal height of a man is said as nine *tāla* (108 finger from toe to top with hands touching the knee)[161]

In planning of the king's fort (*durga*), residence of physician is included and also for *govaidya, aśvavaidya* and *gajavaidya*[162] Medicaments also were stored therein[163] In this connection, a long list of herbal drugs is given classified in six groups (*gaṇas*) according to *Rasa*[164] They are, more or less, the same as in *CS*. The test of poisoned food in fire and on animals is described[165] This also practically tallies with the description given in Āyurvedic texts

The plants growing in Himalayas are enumerated[166] In fact, it is a long list without considering the climatic characteristic of region. A similar list is given while describing the palace of Hiraṇyakaśipu.[167] There are also trees which are fit and unfit for making the icons of gods.[168] *Mahauṣadhyaṣṭaka* (group of eight great herbs) was used in great bath (*mahāsnāna*) It consists of *Sahadevī, vacā, vyāghrī, balā, atibalā, śaṅkhapuṣpī, simhī* and *suvarcalā.*

Abnormalities of delivery and deformities of foetus are also mentioned[169]

Mārkaṇḍeyapurāna — The original *Mārkaṇḍeya Purāna* consisted of cantos 45-81 and 93-136, the other portions including *devi-mahatmya* are later additions The date of this Purāna is approximately between 3rd and 6th cent A.D.[170]

The legend of the origin of Aśvins is there[171] There is mention of offering to Dhanvantari[172] Brahmamitra, an Atharvanic Brāhmana studied Āyurveda which was divided in eight branches and also the text having thirteen chapters[173] He taught this to students, invisibly a demon also learnt it in eight months who was refused, on formal request, the delivery of the whole Āyurveda to him. Thus he became quite conversant with the entire Āyurveda and helped, with Āyurveda, the two girls to recover from Leprosy and consumption He was well-versed in the subject (*tattvajña*) and administered *ausadha* (herbal drug) and *rasa* (mercurial preparations) to eradicate the diseases[174]

The role of *ūsmā (pitta)* and *vāyu* in digestion is well explained[175] *Vāyu* is invisible and moves in the whole body[176] The development of foetus and its delivery by *Prājāpatya vāta* is described in detail[177] In a separate chapter (31), *sadvrtta* (the code of conduct) has been defined *Raśayana* and *vayahkriyā* (rejuvenation) were commonly used[178] *Arista* (signs indicating death) are detailed in a full chapter (40)

Diseases of children including *grahas* are described in detail (*ch* 48) Among other diseases, *Kustha, yaksma, mukharoga, aksiroga, gudaroga* and *apasmāra* are mentioned[179] *Kustha* was regarded as caused by past sins[180] Along with drug, *mantra*

also played its role[181] by non-observance of rule, sometimes the aspirants of *yoga* suffer from certain disorders like *jvara, vāta-gulma, udāvarta, udara* etc. which should be treated carefully[182]

Domestic and sacrificial cereals are enumerated as elsewhere[183].

Plants are mentioned in various contexts [184]

Vāyupurāna-Vāyupurāna is one of the early Purānas although additions were made later on It is presumed that almost all the Purānas were given final shape by the Gupta period; Vāyu Purāṇa particularly mentions the Gupta kings [185] Bāna Bhatta (7th Cent. A.D.) mentions vāyu Purāṇa recited in his village[186]. It proves the existence of this Purāna positively by 6th Cent A D. Al-biruni (11th Cent. A D.) also mentions it. Some portions, however, were added even later

This Purāṇa contains materials which are valuable for reconstructing the history of medicine particularly in the light of its relation to Āyurvedic saṃhitās Not only a number of ideas but even some sentences are found similar in Vāyupurāna and the Carakasaṃhitā[187]

It is mentioned that in dvāpara age ramifications of Āyurveda would occur [188] Āyurveda is also included in eighteen vidyās[189] The legends of Aśvins[190] and Dhanwantari are described in detail Dhanvantari is mentioned as 'Kāśirāja' and 'Sarvarogapraṇāśana' (destroyer of all diseases) It is also said that Āyurveda founded by Bharadvāja, was developed into eight branches and was taught to the disciples[191] Sūta (a person of mixed caste) adopted the medical profession as the last alternative[192] Because of this and also due to other social reasons the professional physicians were branded as 'apāṅkteya' (not fit to sit in a line with others)

In measurement of the body a person is eight tālas from his own fingers That of nine tālas is regarded as auspicious The sensory and motor organs along with evolution of five bhūtas are described[193] Seven dhātus and three dosas are described in relation to the origin of embryo Śukra is of the nature of soma and in the group of kapha and ārtava is of igneous nature and in the group of pitta Thus the whole creation is formed of agni-soma Kapha is seated in hrdaya and pitta in nābhi In embryo thus formed, vāyu enters with the eternal soul [194] Vāyu is regarded as 'Bhagavān' and is glorified[195] Rudras are, in fact, Prānas[196] The process of death is described[197] Treatment of disorder arisen in course of faulty practice of yoga is prescribed In this context, the diseases *vātagulma, gudāvarta, gātrakampa,uroghāta, tvagghāta, bādhirya, trsṇā, ksaya, kustha, kilāsa,* loss of consciousness, blindness, dumbness etc are mentioned[198] Signs indicating death (aristas) are described in a separate chapter (1 19) The legend about the origin of jvara and its distribution in different beings is also there [199]

The development of foetus[200] and *bālagrahas*[201] are mentioned Non-observance of cleanliness during pregnancy by Diti led to division of her foetus into several parts [202]

Six seasons consisting of two months each are termed as rasa (vasanta), śusmi (grīṣma), jīva (varṣā), sudhāvān (śarad), manyumān (hemanta) and ghora (śiśira). The months are madhu-madhāva, śuci-śukra, nabho-nabhasya, isa-ūrja, saha-sahasya and tapa-tapasya[203]. They are again divided into two ayanas — uttarāyaṇa and dakṣiṇāyana[204] Candramā is soma and is the self of plants, he is the king of all plants[205]. Initially plants grew wild (aphālakṛsta) in rural areas (grāmya) and forests (āraṇya). Later on vārtā (cultivation and distribution) was started[206] 'Oṣadhi' is the term for the plants which end on ripening of fruits[207] The domestic cereals (grāmya Oṣadhi) are seventeen in number including Śana[208] Sacrificial cereals are wild as well as domestic and fourteen in number[209]

Origin of plants is mythologically described. Irā has three daughters — latā, vallī and vīrudhā. Latā and vallī gave birth to Vanaspati *(apuspa)* and *vrkṣa (supuṣpa)* respectively *vīrudhā* delivered *gulma, tvaksāra, tṛna* (osadhi)[210] In the context of the eternal tree, parts of plant such as seed, trunk, bud, branches, leaf, flower and fruits are mentioned[211] *Vṛkṣa, Oṣadhi* and *Vīrudh* are often mentioned[212]. Here *'Vṛksa'* includes *'Vanaspati'* as well. Once *Vīrudh* is replaced by *gulma*[213] Shining herbs[214]



Dhanwantari
(From Lepakshi, A.P., 15-16th cent A D)
(Courtesy: Indian Institute of History of Medicine, Hyderabad)

are mentioned which are symbols of the powerful plants which preserve living beings and eradicate diseases. In Drona mountain, existence of *viśalyakaraṇī* and *mṛtasañjīvanī* is mentioned[215]. '*Punarbhava*' is mentioned with *kāśa*[216] It is not known whether it is for *kuśa* or *punarnavā* *Plakṣa* got the important place among trees[217] *Plakṣa, nyagrodha, aśvattha, vikaṅkata, udumbara, bilva, candana, sarala, devadāru* and *khadira* are sacrificial trees used as firewood[218] Other plants are also mentioned[219] which include *nīlāśoka* and *kālāmra*. In *śrāddha*, '*vārtāku*' (Brinjal) is to be avoided[220].

Viṣṇu-Purāṇa — It is one of the earliest Purāṇas. It contains many materials which indicate the established position of ancient medicine Here ocean was churned after putting a number of herbs in the same which came out as nectar providing a strength and immortality to gods. Dhanwantari, emerged with a pot of nectar in his hand,[221] offerings were also presented to him[222] The legend of the origin of Aśvins is also described[223]. There is also geneology of *Divodāsa*.[224] Body is said to be the grand aggregate of *kapha* etc [225] Channels carrying consciousness (*jñānavahā nāḍī*) are attached to *hṛdaya* (heart)[226]. *Vāyū* is said as '*samśoṣaka*'[227] (which destroys moisture) and is *laghu, śīta* and *atirūkṣa*[228]. *Pañcabhūtas*, the basic elements, are described in detail[229] along with *indriyas* (senses) and their functions[230]

Āyurveda is mentioned among upavedas[231]. Domestic and sacrificial herbs are mentioned as elsewhere[232]. Among dietary preparations *saktu, vāṭya, apūpa, saṃyāva, pāyasa* etc. are mentioned[233].

Sadvṛtta[234] along with *dinacaryā* (daily routine) and *rātricaryā* (night routine) is amply described The method of taking food is also described in detail[235] There was usual practice to take some aphrodisiac (*vājīkarana*) medicine before sexual act.[236] Kubjā was expert in cosmetics[237].

There was magical spell which held the foetus from being delivered (*garbhastambhana*) and thus it stayed inside for a long time[238]. The type of vāta causing delivery of foetus is termed as *Prājāpatya vāta* or *sūtimāruta*[239]. *Sūtikāgrha* is also mentioned [240]

Pūtanā is a personified *bālagraha* against which protective measures were applied[241] There is also mention of *upasarga* (infective disease) and *mārikā*[242] (epidemics) Diseases have been grouped into two-*śārīra* (somatic) and *mānasa* (psychic), among the former are *śiroroga* (head disease), *pratiśyāya* (coryza), *jvara* (fever), *śūla* (colic), *bhagandara* (fistula-in-ano), *gulma, arśa* (piles), *śvayathu* (oedema), śvāsa (dyspnoea), *chardi* (vomiting), eye diseases, diarrhoea, leprosy and skin disorders and other organic diseases while the latter include psychic aberrations like passion, wrath, greed etc.[243] There is interesting fight between *vaisnava* and *śaiva jvaras* leading to the victory of the former[244] In the context of description of the rainy season, one half of the verse[245] (5 6 37) reminds of the similar one in *SS (SU* 6.32) [246]

Among plants, *Nyagrodha*[247], *Kadalī*[248], *Plaksa* (king of trees)[249], *Kuśa Kāśa*[250], *Iṣīkā (śara)*[251] etc are mentioned The parts of plants which remain

unmanifest in the seed are *mūla* (root), *nāla* (stalk), *Patra* (leaf), *ankura* (bud), *kāṇda* (stem), *kośa* (receptacle), *Puṣpa* (flower), *ksīra* (latex) and *tandula* (fruits)[252] The word '*vipākakatu*'[253] indicates that the concept of *vipāka* was well known

There is mention of *bālukāyantra* and *mūsā* which indicate the alchemical practices [254]

Visṇupurāṇa mentions time elapsed between the birth of Parīksit and coronation of Nanda as 1500 years [255]

Bhāgavatapurāna — It is said as *Purānasaṃhitā*[256] Dhanvantari is mentioned as the twelfth incarnation of *viṣnu* [257] He is the god of medicine and immortality and teacher of Āyurveda[258] He is prayed to protect from harmful things[259] He emerged from the ocean with a pot full of nectar in his hand He is a direct manifestation of Visnu and is called '*Āyurvedadṛk*'[260] (Seer of Āyurveda) There are also references of Aśvins[261], Cyavana[262] and Dadhyañ having horse's head[263] *Soma* is the king of herbs[264]. Śantanu is said as '*mahābhisak*' and transforms the old to the young[265] Perhaps he was expert in *Rasāyana*

Itihāsa-Purāna emerged as the fifth veda[266]. Āyurveda is one of the upavedas related, in order, to the *Rgveda*[267] *Śarīra* (body) with various components is described[268] The three *doṣas (kapha, pitta, vāta)* are also mentioned. The body passes through nine stages — *niṣeka (conception)*, *garbha* (foetus), *janma* (birth), *bālya* (infant), *kaumāra* (childhood), *yauvana* (youthfulness), *vayomadhya* (middle age), *jarā* (old age) and *mrtyu* (death) [269] The heart-lotus[270] and the *nādīs* (channels) resembling water-channels, are mentioned [271] *Pañcabhūtas* are also mentioned [272] Seven *dhātus* are also referred to[273] A novel derivation of the word '*Kāya*' is found here According to this, it is so called because it is bifurcated in male and female,[274] the words '*vīrya*', '*ojas*' and '*bala*'[275] are used to denote strength Once *vīrya* is replaced by *saha*[276] Śrīdhara explains *vīrya, ojas, bala* and *saha* as strength of mind, senses, body and heart[277] respectively The word '*ūrjā*' is for energy[278] The word '*svastha*' is placed in contrast to '*duhstha*'[279] Several diseases are mentioned in different contexts. *Jvara* of two types is mentioned [280] In personified way, it is *Prajvāra*[281] burning the materials [282] Besides, *yaksmā*[283] *śvitra*[284], *hrdroga*[285], obstruction to faeces and urine[286] *unmāda*[287] seizure by *graha*[288] are mentioned. The inauspicious signs (*ariṣta*) and epidemics (*mārī*) are also referred to [289] For disease besides *āmaya*, the vedic word '*amīvā*' is used [290] Sin (*Pāpa*) was considered as one of the causes of disease [291] The expert physician should treat the patient after thorough examination[292] and should administer the most potent drug [293] At the same time the wholesome diet (*pathya*) should be given [294] If the disease is ill treated it recurs again and again [295] Treatment in incurable case is futile [296] *Mantra* (incantation) and *ausadha* (drugs) were two tools for remedy of diseases[297]. There was also Homeopathic line of treatment[298] Physicians were quite professional and often exploited the patient financially [299]

The position and development of foetus is described well [300] During pregnancy, women had to observe certain guidelines for their behaviour and cleanliness Due to

carelessness in this, Indra cut the foetus in the womb of Diti [301] *Bālagrahas* including *Pūtanā* are mentioned [302] There is also mention of preserving dead body in oil tub [303] There is also reference of transplanation of head[304] and testicles.[305]

Among plants, *kāraskara* and *kākatuṇḍa*[306] are important as they are not mentioned in ancient Āyurvedic texts Other plants are *kuśa, kāśa*[308], *arjuna*[310], *bilva, kumbha, āmalaka*[311], *iṣīkā*[312] and *erakā*[313] were commonly found. *Aśvattha* and *yava* are regarded as the best ones among trees and herbs respectively [314] *Aśvattha* is also said as *'Pippala'*.[315]

Apart from these, long lists of plants are given in other contexts [316] Parts of plants are also mentioned[317] such as *Patra, puṣpa, phala, mūla, valkala* (bark), latex, seed, sprout, stem, trunk and branches

According to this Purāna, 1115 years elapsed between birth of *Parīksit* and coronation of Nanda

Brahmavaivartapurāna — This Purāna is divided into four sections — *Brahma, Prakṛti, Gaṇeśa* and *Kṛṣṇa.* The present study relates to the last one.

Surprisingly, Aśvins are mentioned as the last ones among physicians and Dhanvantari among those knowing mantras [318] It indicates the importance of *mantra-cikitsā* in society That the tantric practices were prevalent is also evident from the fact that *cirajivitatva* (longevity) and *kāyavyūha* (physical stability) are included among the siddhis [319] The status of physician particularly that of unqualified one was not honourable. It is said that such physician becomes serpent in three consecutive births.[320] *'Pañcaprāṇa'* denotes five types of *vāyu.*[321] Brāhmanas were appointed to guard the *sūtikāgara* (maternity room) [322]

Disease was regarded as the most important enemy and *jvara* (fever) occupied the top position among diseases [323] *'galita vyādhi'*[324] probably denotes leprosy Loss of *dhātus (ksaya)* from excessive sexual act was taken as the main cause of disease particularly *yaksmā*[325] (consumption).

'Rasāyana' was held as the best among *osadhis* (drugs)[326] Here it means probably mercurial preparations which might be the drug of choice in those days

Plants are mentioned in various contexts[327] *Aśvattha* is said as the best among fruiting trees[328] and so *tulasī* among flowers[329] *Dūrvā* is the best among herbs and *Kuśa* among grasses [330] Fruit, flower, leaf, trunk, bud and seed are mentioned as parts of plant.[331]

Vāmanapurāna — It describes *sadvrtta*[332] (noble conduct) which has been a part of the Āyurvedic classics[333] Here physician is degraded and placed with prostitutes whose food if anybody takes would have to fast for three days for purification[334] Causes of accidental death are said as poison, strangulation, weapons, water (drowning) and fire (burns)[335]

Origin of some plants is traced to gods such as *Kadamba* is originated from *kāmadeva* (Love-god) and *dhattūra* from Śiva and so on[336]. *Plaksa* is said as the source of the river *Saraswatī*[337]

Nāradīya Purāṇa — This Purāṇa also has got encyclopaedic character Though it does not have any chapter on Āyurveda, still stray references about medicine are found here and there

It is said that nothing should be announced about *prāyaścitta, cikitsā* and *Jyotiṣa* without the scriptural basis. If anybody does so he is guilty like a brāhmana-killer.[338] In case of death of a cow or a brāhmana on judicious use of medicine or surgical operation, there is no guilt or expiation[339]. At the same time, the professional physicians were looked down upon, they were not invited in *śrāddha.*[340] *Sadvṛtta* is describing independently in a chapter (1.27)

The basic concepts of *Pañcamahābhūta*[341] has been elaborated alongwith their existence with life in plants[342] Their qualities, physical entities evolved from them[343] and *indriyas*[344] are also described. The process of digestion by agni with the help of *prāna* and *apāna,* formation of *dhātus* resulting finally in semen and circulation of *Rasa* from heart through the *nāḍīs* are described. It is said that *pakvāśaya* is situated below and *āmāśaya* above the umbilicus.[345] The *saṭcakras* are defined[346] and foetal development is also described [347]

Sattva, Rajas and *Tamas* are the qualities of mind so are *Vāta, Pitta* and *Kapha* which cause physical diseases[348] Among disease *jvara*[349], *gulma, śiraḥśūla, akṣiśūla*[350], *bhūta, visa, graharoga, apasmāra*[351] *plīharoga*[352], *kuṣṭha*[353], *kṣaya*[354], *bhagandara*[355] are mentioned The last disease is said to be caused by taking unwholesome diet of buffalo's (milk) with radish and *niṣpāva,* mixed with oil, *Vātaroga*[356], *guhyaroga*[357], *śūla*[358], *unmāda*[359], *svarabheda*[360] and disease of ears and teeth[361] are also mentioned

Plants are mentioned in various contexts [362] The fruits are also mentioned [363] In *Pañcapallava* are included *panasa, āmra, vata, aśvattha* and *vakula*[364] Similarly, *Pañcadhānyas* are *godhūma, tila, māṣa, mudga* and *taṇdula* (rice)[365] Oils of linseed, mustard, *rājikā, bibhītaka, karañja* and *madhuvrksa* (madhūka) are used for different magical charms[366] Some aromatic substances like *Elā, Lavaṅga, Karpūra* and *Kastūrī* are also mentioned[367] The growth of plant right from seed is traced mentioning various parts such as root, sprout, leaf, stem, bud and flower Out of the flowers some bear fruit others do not [368]

Some dietary preparations are mentioned[369] The units of weight (*māna*) are described.[370] Method of preparation of *āsava* is also given *Āsava* is of three types — *gauḍī, paiṣṭī* and *mādhvī* *Madhu* is of two types — one obtained from fruits (*phalaja*) and the other from plant (*vrksaja*)[371]

A verse beginning with '*tathā buddhipradipena*'[372] tallies with a verse of the *Caraka-saṃhitā.*[373]

Agnipurāṇa — *Agnipurāṇa* is a text of encyclopaedic character and thus contains materials relating to almost all branches of Indian wisdom [374] Although it is not possible to fix the date of this purāna accurately,[375] it may be said that probably it took its shape by the end of the 10th cent A D as Albiruni (about 1030 A D) gives a list of the eighteen Purānas[376] including this one As regards medical material, texts upto *Vṛndamādhava* (10th Cent. A D) are borrowed in the context of Āyurveda[377]

Āyurveda is mentioned, along with other subjects, among the *aparā vidyā*[378] (worldly knowledge) Dhanwantari is said to be the propagator of Āyurveda[379] Physician is termed as *Vaidya*, *Bhisak* and *Cikitsaka* In the city, *vaidyas* were to be positioned in all directions[380] Spies were appointed sometimes in the guise of physician (*cikitsaka*)[381]. The king took midicines in the morning as directed by the *bhiṣak*.[382] In the Court of a king, there should be a physician (*vaidya*) learned in Āyurveda (*Āyurvedavid*)[383] If, instead of the best effects of physician, patient died there was no guilt or expiation[384] but if this happened due to negligence of the physician he was punished[385] In case of adulteration in drugs too there was punishment [386]

Pañcabhūtas and senses along with mind are enumerated [387] The entities evolved from the five *bhūtas* and also the parts developed from mother, father, self, *tamas*, *rajas* and *sattva* are mentioned [388] Foetal development is also described [389] Seven *dhātus* and *ojas* are described with their functions [390] The body has six parts, six skin-layers and seven *kalās* [391] The anatomy of the body is described in a separate chapter (370) The description mostly follows the *Caraka-saṃhitā* Synonyms of some of these words are also given elsewhere [392] *Tridosas* (*Vāta*, *Pitta* and *Kapha*) are dealt with their properties, abnormal symptoms and their treatment The types of *Prakṛti* (constitution) are also described according to predominance of *dosas* [393]

The concepts regarding drugs and their properties and also various pharmaceutical preparations are described (*ch* 281)

The *nādīs* emanating from *hṛdaya* and those carrying *Prāna* are described according to *tantra* [394] During this course, ten types of *vāyu* are also described *Hrdaya* is like a lotus and the seat of consciousness

Among diseases, all types of fever including malaria, abdominal disease, respiratory disorders, leprosy, consumption, jaundice, diabetes, calculus, fistula-in-ano etc are mentioned Besides, all sorts of poisons, invisible agents (*grahas*) and surgical wounds are enumerated[395] There is nothing blessed like health.[396] *Sadvrtta* is detailed in a separate chapter (155)

Mahāmāri vidyā is a magical spell (*ch* 137) designed to destroy the enemy but the name also indicates the existence of epidermics

Āyurveda in its various branches is dealt with in a section from *ch* 279 to 302[397] *Ausadha* (drug) occupies prominence with *mantra*[398] In want of sufficient literature, it is difficult to trace the different topics to their actual medical sources but, as said

earlier, they are mostly based on the *samhitās* of Caraka and Suśruta, Siddhasāra (a work of 7th cent. A.D) and Vrndamādhava. As hidden *mss* are published, new light is thrown about the sources For instance, before publication of the *Siddhasāra,* the verse 285 3 was traced to *Cakradatta* but, in fact, it goes earlier to *Vṛndamādhava* and again further to *Siddhasāra.* The portions relating to medicine of trees and animals are borrowed from the *Viṣnudharmottara Purāṇa.*

A large number of plants are mentioned in different contexts[399] The word '*Kāñcanāra*' comes in this text It may be noted that it is not found in medical or non-medical works before Bhavabhūti and Rājaśekhara (9th cent. A.D)[400] Cereal are also mentioned [401]

Pārada[402] and other inorganic substances[403] are also mentioned Among them are seven lohas (*svarna, rajata, tāmra, ayas, raṅga, kāṃsya* and *nāga*) and eight *dhātus (haritāla, manahśilā, gairika, vahnigairika, svarnamākṣika, pārada, gandhaka* and *abhraka*) In a *vāstu* (house), the place for *Rasakriyā* should be in south [404] Gems (*ratnas*) are described in a full chapter (246) Weights and measures are also there.[405]

Plants and animals are described with synonyms[406] which are based on the *Vanauṣadhivarga* of the *Amarakosa*

Dietary preparations[407] and *surā*[408] are also described

Garuḍa-Purāna — It is also known as *Gāruda, Tārksya* or *Vainateya.* It has encyclopaedic character and contains many subjects including medicine It seems that initially it was meant primarily for describing the *gāruda* or *gārudī,* the branch of knowledge in poisons and their treatment [409] In this connection, *Kāśyapa* of *Mahābhārata* is also referred to It indicates that Kāśyapa was the dominant figure in the field of *Agadatantra* For this both *mantra*[410] and *osadhi*[411] were used

Garuda has mentioned the names of all the Purānas and upapurānas and has included Āyurveda in eighteen *vidyas* [412]

The physical characters of men and women are described in detail[413] Daily routine (*dinacaryā*) is described in a separate chapter (1 50) and so *sadvrtta* (1 205)

Medicine is dealt with elaborately in a number of chapters in the form of dialogue between Dhanwantari and Suśruta and again between Hari and Hara [414] In nidāna, the diseases dealt with are *jvara, raktapitta, kāsa, śvāsa, hikkā, yaksmā, arocaka, hṛdroga, madātyaya, arśa, atisāra, grahani, mūtrāghāta, prameha, vidradhi, gulma, udara, pāndu, śotha, visarpa, kusṭha, krimi, vātavyādhi* and *vātarakta*

This Purāṇa has borrowed materials from many sources The entire chapter (169) on *annapānavidhi* is true copy of the chapter (3) on the same of the *Siddhasāra* (early 7th cent A D). Most of the material in *ch* 168 is also from the *Siddhasāra,* the *nighaṇṭu (ch* 202) is entirely borrowed from the *Nidānasthāna* of the *Aṣṭāṅgahṛdaya Cikitsā* is mostly from the *Vrndamādhava (10th cent A D.) but*

there are also some formulations from the cakradatta[415] (11th Cent. A D) There is also description of killing of mercury[416] and making silver and gold from base metals [417] These items would have been borrowed from some texts on alchemy

The development of foetus and formation of the body is described [418]

Characters of gems (*ratnas*) are described in several chapters in detail (1 68-80)

A number of plants are mentioned in the context of tooth-brush [419]

In metabolism, the role of psychic state is well emphasised.[420] Offering of medicines, food and sympathy to the diseased is praised.[421]

Analysing the above data, it may be said that the *Garuḍa Purāṇa*, as regards the chapters on medicine, is later than the *Agni-purāna* These chapters would not have been added before 12-13th Cent A D

Purāṇas and ancient medicine:

From the foregoing observations it is clear that the Purānas came into existence quite early Often it is placed with *Itihāsa*[422] and is called as the fifth veda which emerged simultaneously with the four vedas[423] or even earlier [424] The *Atharvaveda* mentions Purāna along with the other vedas[425]. Thus it is natural that Āyurveda which is intimately connected with the *Atharvaveda* should have acquaintance with the Purānas It would be logical to say that both Purānas and Āyurveda developed together in post-Atharanic period, thus creating an ideal environment for interaction between them. Many things came from Purānas in Āyurveda and vice verse. Mythological origin of diseases[426] and recitation of stotras like *visnusahasranāma*[427] in treatment of diseases are direct impacts of Purānas. The *Carakasamhitā* recommends appointments of courtiers (attendants) to the king in the hospital who should be well versed in Itihāsa-Purāna besides other arts [428] Such quality is also observed in persons of *Sattvika* (gandharva) *Prakṛti*.[429] Purānas were popularly prevalent in the people including the śūdras, women and the outcaste and so was Āyurveda Thus they embraced each other at the grassroot level and derived vitality from this immortal source

Likewise, Purānas were also influenced by medical concepts and practices and prescribed the life of the people accordingly Materials from the medical texts were also incorporated in Purānas

Though Purānas and Āyurveda existed side by side from time immemorial, interaction between the two took place intimately during the period 500 B C to 500 A.D which may be taken as the golden period of Purānas

Reference and Notes

1 Winternitz M., *History of Indian Literature,* Vol. I, pp. 487-88
2 Mecdonell A.A : *A History of Sanskrit Literature,* p 255
3. Ibid. pp 257-60
4. Winternitz. op cit pp. 480-94
5 HCIP, I, p 292.
6 '*Ayurvedamayah Pumān*' — *Ram* I 45 31-32
7. See *Bhag* 8 8 34, (here he is regarded as directly emanated as fraction of viṣnu); Visnu. 1.9.98,99; *MBH.* 1 18.38.
8. *Ram* I 50.18 (*Aśvināviva rūpena*),
9. There is only one reference (II. 10.30) where it definitely denotes physician
10 Ram II 91.20
11. The statement in Purāṇas (*Vāyu* 54 22, *Mar* 55 53, *Viṣnu* 4 8 10) that Dhanvantari would make the eight divisions of Āyurveda may be in the usual style of Purāṇas to present the past in future tense
12 *Bhela. SU.* 16 11
13 *CS. SU.* 12.8.
14 I. 32.23
15 VII. 35.50, 51
16 VII. 35.60, 61
17 VII. 35.52
18 VII. 35 60.
19. Also compare the verse 'Vāyuh *prānah sukham vāyur vāyuh sarvamidam jagat*' (*Ram.* VII 35.61) with that of the *Caraka-samhitā (Ci.* 28 3) — *Vāyurāyurbalam vāyur vāyur dhātā śarīrinām vāyur viśvamidam sarvam prabhur vāyuśca kīrtitaḥ*
20. *Ram.* I. 49.8
21 Ibid. II. 66 14-16, VII 75 2,3
22 In later works like *hanumannāṭaka, Rāmacaritamānasa* etc Susena is said as the Rāvana's physician but in Vālmīki's *Rāmāyaṇa* it is not so (See Ibid VI. 73 62, 74.10, 91 20, 24, 101 2)
23 *Ram.* VI 91 25-27.
24 Compare it with the four main herbs of *RV*
25 II 91,94, III. 60, 73, 75; IV 1
26. III 73.4; IV 1.79
27. This is also not found in ancient Āyurvedic samhitās In *CS* 'Karbudāra' denotes *Kāñcanāra (CS* SU 4 13) In later texts 'udāra' or '*uddālaka*' is for this (Ram IV. 1 18, see 'Uddālaka-puspabhañjikā' in *Kāśikā* 6 2 74) Bhavabhūti and Rājaśekhara (9th Cent A D.) Explicitly mention this
28 IV 1 80 (*Kovidāra* blossoms in autumn but here it has been said as bloosomed in spring It is said that *Kāñcanāra* blossoms in spring whereas *kovidāra* in autumn (see Cakrapānidatta's *comm. on CS Ka* 1 14)
29 II. 84 3, II 96.18 (*Kovidāradhvajo rathe)*
30 Ibid 50 28.
31. II 94 24 *Sthagara* is included in the *Kisarādi gana* of Panini (4 4 53) which

comprises of the aromatic substances obtained from the market See also *Sthagarālaṅkāra* in *Agni. Gr*

32 II 51.27; VI 7 14 (*Mahājvara*)

33. *Cf. SS.* Ci. 15.12-13.
For other details see Ambalal Joshi *Vālmīkīya Rāmāyana men Āyurveda,* Jodhpur, 1973.

34. Shastri G · *An Introduction to Classical Sanskrit,* p 33, Also *MBH.* I 1 81, 102, 109

35 *MBH.* I. 1 274

36 Macdonell A A op. cit , pp 239-41

37 Winternitz: op. cit , Vol I, p 454

38 *HCIP* , I, p. 298

39 I 53 8 Ātreya was present in the serpent — sacrifice of Janamejaya, The son of Parīksita, (About 14th Cent B C.) he was also with Bhīsma (12 47 5-8)

40. 12.210.21.

41 5.117. 1-21 (Son of Sudeva or Bhīmasena, The King of Kāśī); 13 30.16 (founded the city of Vārānasī) 20-30 (blessed with a son — Pratardana).

42 5.48.75, 1 63 111, 112,

43. 'Bhiṣag' and 'Punarvasu' as names of Kṛṣṇa (12 43 12,13) also show that Punarvasu (Ātreya) was well known then

44. *CS SU.* 1 31.

45 *SS. SU.* 1 3.

46 *Bh* SU 18 1

47 1 50-74, 7 62 4

48 3.122-125, also the legend of consumption to soma 9 35 40-83

49 12.208 24

50 13 23 87

51 12 36 30, 12 23 14, 135,11-14

52 '*Pūyam cikitsakasyānnam*' — (p 382); also 13 90 13 (*Bhisaje pūyaśonitam*). 5 38 4 (*Cikitsakah salyakarta nodakārhah*)

53 5 35 44

54 1 125 26, 150 31 also 4 3 4, 12 7, 10 13 (Relations of urine with fertility was known — 4 3 12)

55 See origin of Cyavana — 1 6 1-2, also 13 50, 156 15-35

56 4 60 2, 12 77 23

57 5 151 58 (*Vaidyaścikitsakah*), 6 120 55 (*Vaidyāh śalyoddharanakovidāh*) This also indicates the two main schools of Ayurveda — School of Medicine and School of Surgery — then prevalent

58 5 152 12, 6 120 57, 10 3 9, 12 28 22

59 12 75 32

60 1.42, 43 45

61 1.43 9 The legend of Kāśyapa also shows the mercenary motive of physicians and disregard to their professional ethics which led to decline of their social prestige

62 3 225-228, 230; 9 46 It may be noted that the grahas are not found in *CS* and thus they are later developments

63 12 225 46, 342 87, also 12 28 45

64 4 9 18, 18 4 (C), 20 23.
65 12 184, 224 17, 12 247, 252. *Pañcabhūtas* are sustaıned by food (13.63 32).
66 12 37 37
67 12.342.86-87
68 12 184. 20-25
69. 12.46 3, 47.66, 155 11, 185 24-25, 328 26-53 (Here fıve ınternal and seven external types of *Vāyu* are descrıbed)
70 14 42 52-53
71 6 26 23 '*Naınam chındantı śastrānı*' ıs a famous verse whıch contaıns all these ınformatıons but no commentator brought thıs to lıght The fırst quarter relates to accıdental dısorder whıle the other three deal wıth the ınnate ones whıch are caused by three dosas (*Pāvaka = pıtta – dāha, ap = kapha – kleda, māruta = vāyu – śosa)*
72 *Icchā dveṣah sukhaṃ duhkham saṅghātaś cetanā dhrtıh* (6 37 6)
73 12 47.72, 73
74 12.16.11, 13
75 12 16 18, 9, also see 11.2 31, 7 7
76 12 45 11
77 12 283
78 12. 283 57.
79 8 34. 43
80 5 9 53-54 (It may have some connectıon wıth '*Jambha*' so often met with ın Vedas)
81 5 75. 18
82 5 147 25, also see soma's legend (9 35 40-83)
83 5 149. 17, 13 90. 10
84 11 15 30, 12 34 3
86 12 14 32
87 13 90 10
88 12 95 13, 14
89 12 77 28 (b)
90 8 79 7, 12 28 35, 36 16 (Also see *kālıdāsa's* '*Bhogīva mantrausadhıruddhavīryah Raghu* 2 32)
91 12 69 56, 86 13-15 (Oıl, *Ghee* and Honey-the three specıfıc remedıes for *vāta, pıtta* and *kapha* respectıvely — See *CS* Vı 1 13)
92 13 98 38-42
93 12 284 69-203
94 13 149
95 *Yathā hı vaıdyah kuśalo vyādhīn jñatvā yathāvıdhı Bhaısajyam kurute yogāt praśamārthamıtı prabho* — 10 3 9 Cf '*Jñānapūvam samācaret*' — *CS SU* 20 20
96 12 86 16
97 'Atharvāṅgırasī hyesā śrutīnāmuttamā śrutıh — 8 69 85 Also see 5 18 5-7, 8 34 44, 91-4
98 12 184 10-18
99 13.58.23

100. 1.124.3.
101. 3.24.17.
102. 7.69.17.
103. 10.1.21-22.
104. 12 154-157, 155.16.
105. 14.92.
106. 12.113
107. 5.124.22.
108. 6.7.14, 18. For plants also see 6.97 21, 9.37.61-64, 13 14.46,47.
109. 13 23 14, 190 13
110. 12.59 29
111. *SS.SU.* 1 6 There ıt ıs 'one lac verses ın one thousand chapters' *(Slokaśatasahasramadhyāyasahasrañca)*
112. 12 313; *cf. SS. Sa.* 1.7
113. 14 50.36,37, *cf.* SS. Sa 1 9.
114. *Padmapurāna* 1 2 54 (*Purā paramparām vaktı purānam tena vai smrtam)* Also *Vāyu.* 1 1 183 (yasmāt purā hyanatıdam purānam tena tat smrtam) Yāska 3 19 (*Purānam kasmāt purā navam bhavatı*)
115. Macdonell: op cıt. p 251
116 Wınternıtz op cıt p. 502
117. Wılson H H . Introductıon, the *Vısnu Purāna 'Upabṛṃhana'* (addıtıon) was a prescrıbed process ın the lıterature of *Purāṇas* and as such chapters and matters were added to them from tıme to tıme Sometımes the orıgınal matter ıs mostly replaced bt the new one as ın the case of *Garuḍa purāna* A type of *samskāra'* (redactıon) was also done ın ancıent medıcal texts by whıch they were brought upto date (*Purānañca punarnavam-CS. Sı 12.37)* Such recastıng can't be ruled out ın case of Purānas too
118. 39 86 The same orıgın ıs found ın Āyurvedıc texts
119 40 112-119
120. 119
121. 118
122 170 68 (*Maṇımantrauṣadhīnam vīryam ko' pı na budhyate*)
123 1 3 145 — 150
124. 1 4.56-57
125. 1 15 314, 319 There ıs also '*Cıkıtsaka*' (1 51 101)
126. 1.18 57
127 1 61 197
128 1 55 57
129 2 72 17
130 1 16 93, 2 7 15, 77 12
131 1 16 88 *cf SS. SU.* 21 8.
132 1 5 18-19, 43 27-31
133 1 5 23, 7 69
134 1 6 21-22
135 2 53,66
136 1.21 273

137 1 22.124-126, 34 188-197.
138. 2.66.119 (*Vātapittakaphādīnam vaısamyam vyādhırucyate*)
139 2.49.64, 68.
140 1.51.102, 52 135, 53.61.
141 1.81.2
142 1.19.279.
143 1 80.44-47
144 1.8 67
145 3.31. 46-47
146 1.12. 44-45
147 1.31.111. *Cf Jātahārıṇı* ın *Kaśyapasamhıtā.*
148. 1.37.58-59
149 1.15.31-48, 17 119-123, 18 114-117, 414, 21 49-50, 22.86-90, 25 34-55 (toothbrushes), 26 16-17.
150 1 7 75, Also 1 8.28.
151. 1.28.23-31
152. 1.4 121 — 123.
153 1.62.107-143, 84 41-65, 2 77 13-14, 72 14.
154 1.62.
155 1.28.7
156. 1.51. 31-55
157 251. 1
158. 144 22
159 168 6 — 10
160. 174 28-32 (*Sa vāyuh sarvabhūtāyuh*)
161 145 10-11 cf CS Vı 8 117
162 217 18, 25
163 217 37-39, 218
164 217 43-81 *cf Skandhas ın CS* Vı 8 139-144
165. 219
166 118 1-45
167 161 52-65
168 257 7-8
169 235
170. Pargıter F E *The Markandeya Purāna,* ınt pp ıv-xx
171 75 21-23
172 26 19
173. It mıght be ındıcatıng the thırteen chapters of the *Caraka-samhıtā (Cıkıtsāasthāna)* The latter seventeen chapters would not have been added by Drdhabala by that tıme
174 60 39-65 It shows that the teachıng of *Astāṅga Āyurveda* was prevalent at that tıme
175 10 49-50
176 24 28
177 11 1-21

180 16 14 There are also *kunakha* and *śyāvadanta* (28 28)
181. 58.12.
182. 36.51-61.
183 46.67-72; also 29.9-11, 15.7-8.
184. 6.12-21, 24.20, 29.12.
185. See 2 37, 300-374.
187. *'Eṣā dvādaśāhasrī'* is in *Vayu*. In the context of *yugas* (1 57 28) while in *CS* in that of the *Saṃhitā (CS Si.* 12) Similarly, *'Jivitasya pradāanāddhi nānyad dānam viśiṣyate' (Vāyu.* 2 18 17) is the same as in *CS Ci.* 1 4.61. It seems that the former has been borrowed by *Dṛḍhabala from Vāyu,* while the latter is added in *Vāyu* on the basis of *CS.*
188. 1.58.23
189. 2.22.78.
190. 2.30. 9-26.
191. 1.1.32.
192. 2.21, 36.
193. 1.4.56-60
194. 2.35. 44-58. (Kaphavarge' bhavacchukraṃ pittavarge ca śoṇitam 2.35.48).
195. 1 2 35-40 cf CS SU 12 2 (*Vāyureva bhagavāniti)* This *ch.* of *CS* evidently seems to be influenced by *Vāyupurāna*
196. Ye Rudrāh khalu te prāṇāh — 1.25.67
197. 2.40.86-91.
198. 1.11.35-58
199. 1.30.296-302
200 1.14.16-25
201 1.9 89.
202 2.6.100-102.
203. 1.30.8-10; The same terms for months are used in *SS SU* 6 6
204 1.50.201
205 1 27 37 (*Candramāstu smṛtaḥ somaestasyātmā hyoṣadhīganah*), 1 31 38 (*Somah sarvauṣadhipatih*).
206. 1.8 127-129
207. *Oṣadhyah phalapākāntāḥ* — 1 8 143 *cf CS SU* 1 72
208 1 8 144-145 (*vrīhi, yava, godhūma, anu, tila, priyangu, udāra, karūsa (koradūsa?), satīna, māsa, mudga, masūra, niṣpāva, kulattha, ādhakī, canaka and śana(* Here *'Saptasaptadaśāh'* should be rightly read as 'Śana — saptadaśāh' (See discussion on the defining criteria of cereals in *comm* on *MB* 5 2 2)
209. 1 8 146-148 (*vrīhi, yava, māsa, godhūma, anu, tila, priyangu, kulattha, śyāmāka, nīvāra, jartila, gavedhuka, kurubinda, venuyava* and *markataka*) *'Kuruhinda'* is excess here, it is not read in *Padma* (1 3 147-150)
210 2 8 330-33
211. 1 10 106-107
212 1 1 52, 8.18
213 1.8 128, 131

214. 2.28.15.
215. 1 49 34
216. 2 13 50-51.
217. 2 1 189
218. 2 13 70-71, also 2.15.29.
219 1 38 68-70, 43 4, 6
220 2 16 48
221 1 9 98-99.
222 3 11 45 cf CS Vi 8 11
223 3 2 2-7.
224 4 8.10-11.
225. 1.17 62
226 3 17 19
227 1 15 151 (*Yasya samśoṣako vāyuh'. cf. Gita — 'na śosayati mārutaḥ*).
228 1.19 22 cf. CS. SU. 1 59
229 1.2 49-50, 12 53, 14.28-32, 22 72; 5 13 62
230 1 2 46-49.
231 3 6 29.
232 1 6 21-26.
233 2 15 12
234 3.11.12,
235 3.11.72-92
236. 3.11.109.
237 5,20. 1-5 (*Anulepanakarmavıd*)
238 4 3 27 cf CS Sa 2 15
239. 6.5 14 — 15
240 5 27.3
241 5 5 7 — 13
242 4 13.110
242 4 13.110
243 6 5 2 — 6
244 5 33.14 — 16
245 *Prarūdhanavaśaṣpādhyā śakragopācıtā mahī*
246 *Komalaśyāmaśaṣpādhyā śakragopācıtā mahī*
247 1 12 66
248. 1 12 68.
249. 1.22 9
250. 2 13 27
251. 4 6 22
252. 2 7 38 — 39
253 5 30 44
254. 6 5. 45 — 46
255 4 24 104
256 12 4 41, 6 4.
257 1 3 17
258 2 7 21

259 6.8 18.
260 8 8 31-35
261. 2.3.5, 6 2
262 9.3 (Legend of Cyavana and Sukanyā)
263 4 1 42.
264 4 30 14, 9 14
265 9 22-13.
266. 1 4 20, 3 12 39
267. 3 12 38
268. 10 60 45, 84.13
269. 11.22 46 (*Nısekagarbhajanmānı bālyakaumarayauvanam. Vayomadhyam jarā mṛtyurıtyavasthāstanornava)* A stage of '*pauganda*' ıs also mentıoned between *bālya* and *kaıśora (balyapaugaṇḍakaıśorāh* 10 45 3)
270. 11 14 36
271 2 6.9. (*Nādyo nadanadīnaṃ tu*)
272 3 31 14, 11 28 26
273 2 6 1.
274 3 12 52 (*Kasya rūpamabhūd dvedhā yat kāyamabhıcaksate*).
275. 4 18 15
276 10.56.26. In Vısnu (3 3 6) *ojas* ıs replaced by *tejas*
277 In Āyurveda, *ojas* ıs the essence of all *dhātus* and provıdes general ımmunıty
278 6 4 8
279 4 11 21. The counterpart of '*duhstha*' ıs '*sustha*' whıch ıs read ın later texts (see *CD ch* 78)
280 4.29 23; also 5 12 2
281 4 27 30
282 4.28 11
283 6.13 12, 6 23 (Moon's consumptıon), 9 22 24, 11 6 36
284 7 1 18, 11 23 16
285 10 33 40
286 9 3 5
287 3 20 41, 10 30 4
288 7 7 35.
289 10 56 11, 57 33.
290. 10 39 4
291 7 5.27.
292 6 1 8
293 6 2 19 (*Vīryatama agada)*
294 6 1 12
295. 11 28 28
296 4 9 34
297 8 21 22
298 1 5 33
299 3 30 32 (*Hrtavıtta ıvāturah)*
300 3 31 1 — 10
301 6 18 60

302. 10 6.4-8, 7.4 37
303. 10 57 8
304 4 7 8; 9.16.20.
305. 9 19 10
306. 5 14 12
307 1 19 17 etc.
308. 3.22.31 etc.
309. 4.18.25.
310. 10.10.23.
311. 10.18.14.
312. 10.19.2
313. 11.2 22, 30.20
314 11 16.21
315 11 30.27
316 8 2.10-19, 10 30 5-9.
317 10.22.34, 11.12-22, For exudatıon see 6 9 8.
318 73.90.
319 78.35.
320 85.161.
321 67.14.
322 9 69 cf CS Vı. 8 11.
323 73. 84
324 26.26.
325 75.22; 35 94.
326 73.90.
327 4 116-124, 17 150-152; 28 162-167, 103, 104 10-16
328 26.14; 73 65
329 26.14.
330 73.83.
331 6. 209-210
332 14.26
333. See CS.
334 14.96
335 14 101
336 17.1-10
337 32.3.
338 1.12 64 (*Vınā śāstrena yo brūyattamāhurbrahmaghātakam*)
339. 1 14 46-48
340 1 28.17
341 1 42 58, 44 24, 45 55
342 1 42.67 — 73
343 1 42.75, 1 63 86-88 (bone, muscles, haırs, skın, naıls and teeth are *Pārthıva,* urıne, blood, *kapha,* sweat, Semen etc are *Āpya Tejas* ıs ın heart, *āmāśaya,* vısıon and *pıtta Vāyu* ıs of fıve types *Prāna* etc and *ākāsa* pervades ın all the nādıs (channels)
344. 1 45.59, 63 75-77

345. 1 42.106-113
346 1 65 67-71
347. 1 32 9-12
348 2.3 47-48
349 1 32 8, 74 19-22 '*Trıdosa* (2 16 82) was the common term for *sānnıpātıka jvara* whıch was treated wıth *Trıkatu* (2.16 83)
350 1.32 8
351 1 74 19-22, 55 293
352 1.74 161, 165
353. 1 90 216, 2 16.75, 1.55 287
354. 2 14 30, 1.55.293
355 1 55 286, 290
356 1 55 280, 290.
357 1.55 286
358 1.55 288
359. 1 55.291
360. 1 55 293
361 1 55 290
362 1 56.204-210, 76 31-35, 80 136-146, 86.34 38, 87 146-153, 90 30-40
363 1 79. 151-152.
364 1.65.31.
365. 1.75.7.
366 1.75.3-6
367 1 75 11-12
368 1 32 2-3
369 1 79 149-151, 80 127-128
370 1 75 16-17
371. 1 90 11-23
372 1 59 37 (*Tathā buddhıpradīpena śakya ātmā nırīksıtum*)
373 *CS* Vı. 4 12. (*Jñānabuddhıpradıpene yo nāvıśatı tattvavıt Āturasyāntarātmānam na sa rogāñścıkıtsatı*)
374 *Tasmāt purānamāgneyam sarvavedamayam mahat Sarvavıdyāmayam punyam sarvajñānamayam varam* (271 17)
375 Wınternıtz I, 541
376 Ibıd
377 It ıs not correct to say that Cakradatta (11th Cent A D) ıs quoted ın thıs text (see B B Mıshra Polıty ın *Agnı Purāna* P 18-19, App 36-37) because all the references can be traced to *vrndamādhava* or even earlıer sources lıke *Sıddhasāra*
378 383 3, also 174 21 The word '*Vaıdyaka*' ıs also used for thıs ın the openıng and the concludıng chapter (1 17, 383 60)
379 3 11
380 106 12
381 220 21
382 235 7
383 220 6

384 173 5.
385 258 36.
386 258 39. 3 and 4 are borrowed from *yājñavalkya-smṛtı*
387 25.24.
388 369 28-36.
389 369 19-27
390 369.40-42, also 280 7-10
391. 369 42-45
392 364.13-25 Thıs ıs based on the *Amarakoṣa*
393. 280 6, 17-48, For types of Prakṛtı also see 369.37-39
394. 214 2-6, 30 29, 33
395. 31 18-36 Some dıseases are also mentıoned wıth theır synonyms in 364 9-12
396. *Nāstyārogyasamaṃ dhanyam* 382 14
397. Ch 279 deals mostly wıth *Pathya* (wholesome food), Ch 280 — basıc concepts of *doṣa-dhātu-mala;* Ch 281. Drug Scıence and Pharmacy (see also 41.5, 141.7-8) Ch 282 — *Vṛkṣāyurveda,* Formulatıons used ın different dıseases are dealt ın chs. 283, 285; *Rasāyana* ın *ch.* 286 (*Mṛtyuñjaya kalpa*), Treatment of poısonıng ın Ch 295, 297, 298, *Bālatantra* ın *ch* 299, *unmāda* etc. caused by *grahas* ın Ch. 300; Elephant Scıence and Medıcıne ın chs. 297, 291; That dealıng wıth horse ın Chs. 288-290 and cow medıcıne ın *Ch.* 292 ch 302 deals wıth aphrodısıacs and related matters Ch 284 deals wıth *mantras* as remedy
398. 159 12 (*Auṣadhānı na mantrādyāstrāyante mṛtyunānvıtam*)
399 57.9-17, 69 8-18, ch 80 81 49-52, 93 14, 95 57, 123 29-34, 125 43-46 (*Mahārakṣā-vıdhāyınī*), 140 1-3, 141 2-16, 167 6-7, 175 15, 178.12-13, 202 2-15, 222 7-9 (*Vısaghna*)
400 Thus ıt may be a landmark for decıdıng the date of a text On thıs basıs, thıs portıon of *Agnı-purāna* can not be earlıer than 9th cent A D.
401. 68 7, 95 60-61. (Aṣṭavrīhı) 175 13-15, 366 26 (classıfıed ınto three-*śamīdhānya, śūkadhānya* and *tṛnadhānya*)
402. 61 44, 95 59
403 95 58-60, 366 39-42
404. Does '*Rasakrıyā*' mean alchemy?
405 366 36-38
406 363 15-78
407 40 8-18
408 173 21-23
409 1 2 55, 19 1-4
410 1 19 21-24
411 1 19 27-30
412 1 215 15-21
413 1 63-65
414 *Chs.* 146-147 deal wıth nıdāna 168 deals wıth *dosas, Prakṛtı* etc In *ch* 169, there ıs descrıptıon of food and drınks (*annapāna*) (wrongly prınted as '*anupāna*') Chs 173, 187 and 197 deal wıth madhurādı gana, rasāyana and antıpoison remedy respectıvely Horse medıcıne ıs ın ch 201 and nıghantu ın 202 Other chapters contaın treatment of dıseases wıth drug formulatıons and tantrıc mantras (see chs 170-172, 174-186, 188-194)

415. The application of camphor powder in urethra to relieve retention of urine (1 17.57) is not in *Vrndamādhava* but in *Cakradatta* (*Mūtrādhāta*, 13)
416. 1 184 18
417 1 184 19-20
418 1 217 5-11, 2 22 (Here apart from foetal development, *indriyas*, ten nādīs, ten *vāyus*, Physiology of digestion and quantity of dhātus etc are mentioned)
419 1 205 48-49, also 1 214 49 205 122, 2 19.19
420 1 114 75 (*Svasthe citte dhātavah sambhavanti)*.
421 1 41 25
422 *SB* 11 5 6 8, *Br Up* 2 4 10
423 *Bhag* 1 4 20, 3 12 39
424 Vāyu. 1 1 54
425 *AVS* 11 9 (7) 24 (*Purānam purātana-vrttāntakathanarūpam ākhyānam — Sāyaṇa*), 15 6 11-12 (4) — There with *itihāsa, gāthā* and *nārāśaṃsī*)
426 *CS* Ni 8 11, 1 35, Ci 3 15-25, 23 4-5 In the legend of *Rājayaksmā* (*CS Ci* 8 3-12), there is clear mention of '*Paurānī kathā*' (Legend taken from Purāna) See also Filliozat, *Classical Doctrine*, p 104 He thinks that the Vedic legend has come to medical tradition through Puranic intermediary
427 *CS Ci* 3 311, also see Ibid 1 4 46
428 *CS SU* 15 7
429 Ibid Sā 4 37

MEDICINE IN BUDDHIST AND JAINA TRADITIONS

P.V. SHARMA

Buddhist Tradition:

Lord Buddha is said as '*Mahābhiṣak*' (great physician) because he shows the path of liberation from disease and death His renunciation was caused by the moving sight of the diseased, the old and the dead. The *Āryasatyacatuṣṭaya* (the four noble truths) propounded by him is nothing but a medical logic (disease, its cause, treatment and its way) Victory over death was a matter of spiritualism while that over disease was a practical thing Compassion combined with charity prompted the Buddhists missions to treat the patients after diagnosing the disease. "*glānapratyaya*' (diagnosis of disease) and '*bhaisajyadāna*' (charitable distribution of medicines) was the regular programme of the Buddhist *saṅghas* and was implemented in *Buddha-vihāras* by Buddhist monks and nuns It is well known that Emperor Asoka established hospitals and dispensaries for treating the sick and ordered for planting medicinal plants on avenues and other places

Āyurveda came into existence long before the emergence of Lord Buddha (624-544 B C) and naturally Buddhist tradition imbibed all the previous and then present culture giving it the particular hue and colour

The *Tripitaka* literature is the oldest source to have a glimpse of Indian medicine in Buddhist tradition Tripitaka does not mention 'Āyurveda' but '*tikicchā*' (*cikitsā*) Similarly, the diseased is mentioned as '*gilāna*' (*glāna, glānaśālā-hospital*) instead of '*ātura*' as in medical text[1]. There we find reference of Taksaśilā where *tikiccā* was one of the important subjects of learning and with which is related the anecdote of the great physician Jīvaka[2] stray references of the eight branches of Āyurveda are found in these texts in different contexts

Five *bhūtas* are well known but the Buddhist texts mention only four of them excepting *ākāśa*[3] Cullavagga has got ample material which throws light on the daily life of the monks and nuns, concepts about health and hygiene and the arrangements therefor in *vihāras* Particular care was taken for purifying water by straining it[3a] There was also systematic arrangement for maintenance privies and bath rooms[3b] Cleaning of the surroundings[3c] and personal cleanliness such as by nail-cutting tooth-brushing etc was strictly observed[3d]

Names of a number of diseases come in Tripitaka texts while *kustha, ganda, kilāsa, śosa* and *apasmāra* are said as five prevalent ābādhas[4] Śāradika ābādha[4a] mentioned so often seems to be aggravation of *pitta* common after rainy season The

combination of five substances (pañca bhesajjāni) was prescribed as remedy in such condition These were ghee, butter, honey, oil and jaggery[5] Viśākhā presented among other things, diet and medicines (*gilāna-bhatta* and *gilānabhesajja*) to the *saṅgha*[6]. There is also description of the quality and defects of attendent (*gilānupatthāpaka*) and patient[7]. Waiting upon the sick is emphasised by Lord Buddha himself[7a]

Mahāvagga, in the book (VI) on medicaments, gives valuable informations regarding disease and their treatment In headache, oil was applied on head and drug was administered through nose by sniffing, wicking or blowing through pipe; nasal spoons were also used for the purpose (13 1-2) In case of wind in stomach, intake of oil is prescribed (14 1) In such case, onion is also recommended in *CV* (V 34 1-2) In Rheumatism, sudation is prescribed (14.3) In intermittent ague (Malaria?), blood-letting was done (14 4) Four kinds of filth-dung, urine, ashes and clay were given in case of snakebite Decoction of dung was given as emetic (14 7) In *gharadinnaka* (*garavisa*?), decoction of soil was prescribed. (14 7). In case of jaundice, *gomūtra-harītakī* (*Harītakī* impregnated with cow's urine) was prescribed In skin diseases, anointing with perfumes (aromatic drugs) was done Scabies is commonly met with for which monks were provided with itch-cloth and the disease was treated with some powders (V 9 1, VIII 17 1) Fever is once treated with lotus stalk (VI 20 1) In obesity, purgative, excercise and heating were prescribed (14 7, CV V 14 1) There is also mention of *ahivātaka roga* (I 50) which spread as epidemic, Gruel, soup and meatbroth were usual diet for the diseased (14 7) Surgical operations of wounds and abscesses were done and they were treated with bandaging, dusting, fumigation etc (14 4-5, also 23.6) Fistula-in-ano is mentioned (*CV V* 27 4) and was treated with surgical operation and use of clyster (*vatthikamma* = *vartti*) Akāsagotta, a surgeon was performing the operation when Buddha saw it and out of disgust he ordered that no surgical operation was to be performed within a distance of two inches around the anus, and a clyster also was not to be used (22 1 4)

For eye-disease, eye ointments and collyriums were applied with *Śalākā* (rod) (11 1-2, 12 1-4)

Once Buddha was administered purgative drug sprinkled on lotus flower which exerted its effect on smelling, (before it, he was prescribed oily massage for a few days (VIII, 1 30, cf CS Ka 10 15-17) After eating dried boar's flesh, Buddha suffered from diarrohea with sharp pain (*visūcikā*?) (*Mahāparinibbāna-sutta,* IV 18,21)

In the beginning of MV (VI), drugs have been mentioned in a classified way as in *CS* where they have been divided into three categories-vegetable, animal products, and minerals Here fat of animals is first described (2 1) Then the vegetable drugs are mentioned in the following groups,

1 Roots-turmeric, ginger etc (3 1)
2 *Kasāya* (Bark?)* — *nimba, kutaja* etc (4 1)
3 Leaves-*patola, tulasī* etc (5 1)
4 Fruits-*vidaṅga, pippalī* etc (6 1)
5 *Niryāsa-hiṅgu, sarjarasa* etc (7 1)

Lastly, salt is mentioned which is an inorganic substance (8.1)

A large number of medicinal plants are mentioned in different contexts.

Kaumārabhrtya was commonly known as '*dārakacikitsā*' in Buddhist tradition[8]

'*Sallakattiya*' is the term fo‹ surgery[9] Jīvaka[10] and Akāsagotta[11] were eminent surgeons, the latter specialised in anorectal surgery which was disapproved by Buddha [12]

Mahāvagga (VIII 1 1-29) gives a detailed account of Jīvaka and his miraculous medical and surgical cures Jīvaka was the eminent physician, contemporary of Buddha He was physician in the court of Bimbisāra and also to Buddha and his order. He was born of Śālāvatī, a courtesan of Vaiśālī The child was forsaken by the mother and was brought up by prince Abhaya in the royal palace and so he was called 'Komārabhaccha[13]. This word also indicated *Kaumārabhṛtya* (pediatrics), one of the eight branches of Āyurveda, and thus means 'expert' in treatment of children He learnt the science of medicine from the renowned scholar-physician Atreya at Taksaśilā. He studied there for seven years and obtained the certificate of mastery on the subject from his teacher.

Many miraculous cures are credited to him On his way to Rājagrha, he cured the merchant's wife, at Sāketa, who had been suffering for seven years from a head-disease At Rājagrha, he cured king Bimbisāra of fistula by one application of medicine and by dint of that success was appointed physician to the king He also performed a cranial operation on a merchant at Rājagrha and pulled out two worms by which the patient was cured Again he performed laparotomy in a merchant's son at Benaras and set the twisted instestins right He also cured king pradyota (of Ujjain) who was suffering from Jaundice[14]

Dhammapada[15]

Dhammapada comes as a part of *Khuddaka Nikāya* within *suttapiṭaka* It mentions *Ārogya* (freedom from disease) as the highest gain[16] It advises to avoid the two extremes-*ayoga* and *atiyoga* (and to adopt the middle path by which one develops)[17] Though generally in Buddhist texts, the word '*gilāna*' comes for 'diseased', in *Dhammapada,* the word '*ātura*' has been used[18] It mentions gourd as unwholesome in *Śārada* (autumnal fever) The luxuriant growth of the climbing plant '*māluvā*' (*Bauhina vahlii*) covering the *śāla* tree is depicted well [19]

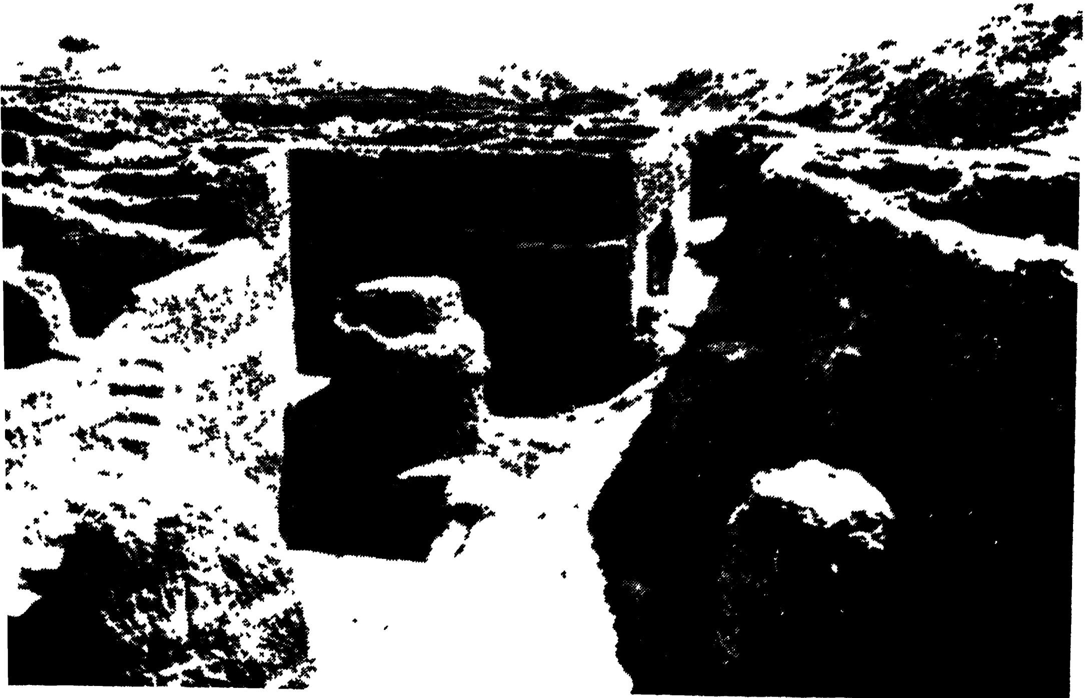
Apadāna

Apadāna or *avadāna* also is a part of *Khuddaka Nikāya* There are many texts on this topic of which *avadānaśataka* and *divyāvadāna* are more popular

Avadānaśataka[20] is dated about 100 A D[21] It mentions treatment of bodily disorders by physician (*vaidya*). Cloth, food, beddings, appliances for diagnosis and treatment of the diseased (*glānapratyaya-bhaiṣajjyapariskāra*) were offered to Lord Buddha[22]. '*Śāradika roga*' (disease prevalent in autumn) is mentioned with symptoms as pallor and yellowness in body, emaciation and debility. It seemed to be an epidemic of hepatitis which occured due to imbalance of *kāla* (time) and *dhātu* (body constitutents) Four *dhātus* (*bhūtas*) *pṛthvī, ap, tejas* and *vāyu* are mentioned The four components of treatment physician, drug,nurse (and patient) are also mentioned[23]

Kuṅkuma, tamālapatra, spṛkkā etc were applied as cosmetic paste on the body[24]. Management of pregnancy in terms of drug, diet and behaviour is well described. It is said that the pregnant women should avoid excess of all the six tastes and unpleasant sound[25] In one case, Jīvaka was called to operate upon the abdomen to deliver the foetus She was also advised to take five parts (*pañcāṅga*) of a plant as drug[26]. *Leha* is prescribed in a diseases of child when other measures failed[27]

Divyāvadāna[28] contains valuable informations It mentions houses suitable in winter, summer and rainy seasons[29]. In fever with *dāha* (burning sensation) physicians prescribed application of *gośīrṣa candana*[30] One merchant who had good knowledge



Excavated Remains of Taksaśilā (Bhir Mound)

ot *arıṣṭādhyāya* (sıgns ındıcating death) knew about the ımmınent death of hıs fellow merchant and then after studyıng the medıcal texts hımself admınıstered the suitable remedy in form of five parts of a plant. There ıs also mentıon of *sammohinī* and *sañjīvanī oṣadhi.* Ten vırtuous paths and ten non-virtuous ones are also mentıoned[31]. The ripened abscess needs surgical operatıon A good physıcıan ıs surounded by patıents[32]. In *Jyotiṣkāvadāna (ch.* 19), there is reference of *Jīvaka.* Once it ıs mentıoned that drugs were decocted in *sthālikā* (earthen pots) which sometımes were broken[33]. Plastıc surgery ın relation to extremitıes, nose and ears ıs descrıbed[34]. In *vītaśokāvadāna (ch.* 28), a severe disease ıs mentioned ın whıch all the haırs of head fell out. Knowıng thıs Aśoka despatched the contıngent of nurses[35] alongwıth medicınes by whıch he recovered. In *Rūpavatyavadāna (ch.* 32), functıons of *aṅkadhātrī, maladhātrī, stanadahātrī* and *krīdāpanika-dhātrī* are elaborated In thıs connection a number of toys for chıldren are also enumerated whıch were ın vogue at that time.

In *Śārdūlakarṇāvadāna (ch.* 33), many topıcs are touched upon. Firstly, the plants are mentıoned in classıfied way in seven groups such as *phalguvrkṣa, sthalaja vṛkṣa, ksīravṛkṣa, phalabhaıṣajya vrkṣa, sthalaja puṣpavṛkṣa* and *jalaja puṣpa.* Apart from thıs, herbs growıng in vıllages (*grāmya*) and hılls (*Parvatīya*) and also grasses (*tṛṇa*) are mentıoned. *mūla, skandha, tvak, sāra, patra, puspa* and phala are mentıoned as parts of plants Āyurveda ıs mentıoned alongwıth the four vedas. *Apasmāra, kılāsa* and *kuṣtha* are among the dıseases (verse 69) Weıghts and measures are also there Dealıng wıth the *naksatras,* it ıs saıd that collectıon and admınıstratıon of drugs and teachıng of medıcıne should be started ın *Śatabhıṣā.* Aśvını ıs also good for these thıngs *Mūla* ıs preferable for treatmnet of women and chıldren At the end, there ıs *svapnādhyāya* (topics dealıng wıth dreams) There ıs also reference of *Mārī* or *Mahājanamaraka* (severe epıdemıc) occurıng due to sın of the people [36]

In *Kunālāvadāna (ch.* 27), there ıs an ınterestıng anecdote about a dısease of kıng Aśoka and ıts treatment wıth onıon by hıs wıfe after experımentally observıng ıts effect on ıntestınal worms

Mılındapanha ıs one of the non-canonıcal palı texts whıch has orıgınated ın north-west Indıa by about begınnıng of the Chrıstıan era [37] It ıs ın the form of dıalogue between Nāgasena and kıng Mılında (Menandros) Of the seven books of whıch the present text consısts, only a small portıon of the fırst ıntroductory book and the second and the thırd book are old and genuıne The other addıtıons have crept ın later on[38] That ıs why one edıtıon[39] ıs only upto that protıon whıle the other one[40] contaıns seven books

Mılındapanha contaıns valuable ınformatıons about Buddhıst tradıtıon Medıcıne was one of the popular subjects of teachıng Mılında hımself learned *cıkıtsā* alongwıth other eıghteen subjects [41] Detaıls of hair-dressıng ıncludıng applıcatıons of myrobalans (*harītakī* and *āmalakā*) are gıven[42] *Bhūtavaıdya* (physicıan expert ın *bhūtavıdyā*) ıs mentioned[43] It is to be noted that *bhūtavıdyā* ıs one of the eıght branches of Āyurveda.

Some of the organs and components of the body are mentioned such as nails, *Yakṛt, klomaka, plīha, phupphusa, antra, pitta, slesmā, rakta, mūtra, mastuluṅga* etc[44] Development of foetus is indicated in terms of *kalala, arbuda, peśī* and *ghana*[45]

There is reference of a physician administering the *pañcamūla* drug to a patient for curing his disorder[46]. Intake of the mixture of ghee, butter, oil, honey and jaggery is mentioned as useful in case of poisoning[47] Six *rasas* (sour, salty, bitter, pungent, astringent and sweet) are perceived on contact with the tongue[48] Preparation of dishes with curd, salt, ginger, cumin and black pepper is referred to[49] Treatment of wounds (*vraṇa*) with *ālepa* (paste), *tailamrakṣaṇa* (application of oil) and *colapaṭṭaparivesṭana* (dressing) is given which promotes healing[50]. Physician administers drug in proper time[51] Body is said to have composed of four *mahabhūtas*[52]. Among cereals and other articles rice, barely, sesamum, green gram, black gram, ghee, oil, butter, milk, curd, honey and jaggery are mentioned[53] which shows their popularity in diet[53]

The connection of urine with reproduction is shown where an ascetic was born by intake of urine of an ascetic[54]. Four types of animals are mentioned-*andaja, jarāyuja, saṃsvedaja* and *aupapātika*[55] Sattvas descend into embryo because of *karma, yoni, kula* and *āyācana*[56] Once there appeared a wound in the foot of Lord Buddha causing haemorrhage which was treated by Jīvaka In bodily disorder he was given purgative, In case of aggravation of *vāta* a monk gave him hot water[57] In this context, Nāgasena says that disease is caused by eight factors-*vāta, pitta, ślesmā, sannipāta,* seasonal imbalance, irregular diet, improper treatment and past deeds[58] He further narrates the aggravation of *vāta, pitta* and *ślesma* in ten, three and three ways respectively *Vāta* is aggravated by cold, heat, hunger, thirst, overeating, sedentary habit, anxiety, exertion, (excessive) treatment and past deeds. *Pitta* and *kapha* are aggravated by cold, heat and irregular diet[59] The treatment of medogranthi (lipoma) by surgical operation, cauterization and application of *alkali* is mentioned[60] Here the surgeon is designated as '*bhisak śalyakartā*[61] Methods and treatment used are *Vamana, virecana, anulepana* and *anuvāsana*[62] alongwith *snehana* and *lekhana*[63] Use of *gomūtra* and *agada* was prevalent[64] After purification of body with emesis etc a prescribed course of diet was given[65] *Visūcikā* occurred by over-eating[66] *Vātika* disorder (*vātābādha*), *tṛṇapuṣpaka*[67] (hay fever) and *unmāda*[68] (insanity) are also mentioned These are the ten characters of living body — cold, heat hunger, thirst, defaecation, urination, thinajiddham, old age, disease and death[69] There is enumeration of animals, minerals, metals, cloths, cereals and aromatic parts of plants[70] Certain groups of plants such as *tṛna, latā, gaccha, rukkha, osadhi* and *vanaspati* are also mentioned[71] Causes of premature death are enumerated as disturburances of *vāta, pitta* and *kapha,* seasonal imbalance, irregular diet, improper treatment, hunger, thirst, snakebite, poisoning, burns, and drowning[72] There are three qualities in agada — it is anti-poison destroys diseases and promotes vitality[73] There is also description of a clinic (*ausadhāpana*) where drugs were stored and used on patients[74]

Similarly the *Mahāyāna* texts throw a flood of light on Buddhist tradition *Lalitavistāra*[75] (1-2 Cent A D)[76] is one of the nine important texts which deals with

the advent of Lord Buddha and his teaching He is mentioned here as '*Vaidyarāja*' (king of physicians), *vaidyottama* (best among physicians), *mahāvaidyarāja* and *mahāśalyakartā* (great surgeon) who cures the disease of persons with administration of the drug of immortality[77] In the context of diseases, those caused by *vāta, pitta, ślesmā* and *sannipāta*, diseases of eye, ear, nose, tongue, lips, teeth and throat, goitre, *kuṣṭha, kilāsa, śoṣa, unmāda, apasmāra, jwara, piṭakā, visarpa, vicarcikā* etc are mentioned[78] *Dakodara* is also there[79] Medicines were distributed to the patients who were also nursed[80]. Descent into embryo and foetal development in stages of *kalala, arbuda, ghana* and *peśī* are described[81]. Eight each of the *aṅgadhātrī, kṣiradhātrī, maladhātrī* and *krīḍādhātrī* wre employed to take care of Buddha the child[82] Signs of great men and other subsidiary characters are described[83] Purification of body, speech and mind is attributed to Lord Buddha[84] which later on was transferred to Patañjali

Saddharmapuṇḍarīka[85] is a work of Ist cent A D [86] and is one of the most sacred mahāyāna texts Here also *tathāgata* is said as "*mahāvaidya*"[87] and bodhisattva as '*bhaiṣajyarāja*'[88]. There was a great virtue and merit in offering various kinds of medicines for the diseased in worship of sugata[89] (Buddha) Devotees established *vihāras* attached to a flower garden and park, furnished with cots and chairs and equipped with food, drinks, appliances for diagnosis and treatment of the sick and other comforts[90]

Diseases are of four types-*vātika, paittika, ślaismika* and *sānnipātika*[91] A number of individual diseases are mentioned such as *kuṣṭha, kilāsa* etc [92]. Deformities of body parts are also mentioned[93] *Apasmāra* and different types of continuous and intermittent fevers are referred to[94]

Plants are generally mentioned as of four types-*trna, gulma, osadhi* and *vanaspati*[95] Apart from these, once *druma* and *mahādruma* are mentioned[96] *Nāla, śākhā, patra, puṣpa* and *phala* are the parts of plants mentioned[97] In the Himālayas grew four miraculous herbs[98] Drugs were administered in the form of juice, paste, decoction, infusion, after combining with other drugs, by injecting through needle or cauterization or mixing with food[99] Fragrance was derived from flowers (Jasmine etc), aquatic flowers (Lotus etc), other trees (sandal etc) and celestial plants (*pārijata* etc)[100] There were seven *ratnas* (gems) which were used in construction of *stupas* These ae *suvarna, rūpya, vaidūrya, sphatika, lohitamukti, aśmagarbha* and *musāragalva*[101]

Suvarṇaprabhsasūtra[102] mentions two factors in longevity avoiding exertion and proper nutrition[103] It mentions three bodily, four vocal and three mental actions [104] out of the four *dhātus (bhūtas)* two are said as moving upwards and the other two going downwards thus counteracting each other [105] It is prayed that all the people may recover and regain health and vitality [106] the most important medical document is the chapter 17 (*vyādhipraśmanaparivarta*), Jalavāhana, a merchant's son, learnt *Aṣṭāṅga Āyurveda* from his father who was a great physician and wellversed in all the branches of Āyurveda and treated the people afflicated with various diseases Many interesting informations are revealed in discussion between father and son There ensues a change

in *indriyadhātus* according to change in seasons which are six in number but for practical purposes they can be grouped into four comprising of three months each. These are *varṣā* (rainy season), *śarad* (autumn), *hemanta* (winter) and *grīṣma* (summer)[107] *vātika, paittka, sannipatika* and *kaphaja*-these four types of disorders occur in the above four seasons respectively. Accordingly the means for their pacification are also given[108].

In the context of *abhiseka*, a number of aromatic substances are mentioned[109]

The poetic works of Aśvagohṣa (2nd Cent A.D.) — *Buddhacarita*[110] and *Saundarananda*[111]— contain valuable information. He once says that the (text on) medicine which could not be produced by Atri was done by his son atreya[112]. He mentions health as *Dhātusāmya*[113] and also *śīta* and *uṣna vīrya*[114]

The person endowed with *vidyā* (*māyūrī* etc.) and taking herbroot in hand does not get bitten by snake,[115] but the *mantras* are efficacious only in such cases and not in organic disorders which are troublesome[116]. '*Agada*' was the remedy for poisons[117] There are two types of diseases, psychic and somatic, which are treated differently by two types of physicians-medical experts and spiritualists.[118] Food has been dealt with in terms of quality etc. for health[119] One who knows properly the diagnosis and treatment of diseases regains his health quickly The four *āryasatyas* are equated to diseases, its cause and cure as follows:

1 *Duhkha* — *Vyādhi*
2 *Dosa* — *Vyādhinidāna*
3 *Nirodha* — *Ārogya*
4. *Mārga* — *Bhaiṣajya*[120]

Rāga, dveṣa, and *moha* are equated with *kapha, pitta* and *vāta* which are treated respectively with rough, cold and unctuous measures.[121]

Extraction of foreign body (*śalya*) by *śalyakṛt*[122] (surgeon) is mentioned alongwith the instrument 'forceps' (*Samdaṃśa*)[123] *Ariṣṭas* (signs indicating death) are also mentioned.[124]

Jātakamāla[125] of Āryaśūra (350-400 A.D.)[126] though a text of poetry, furnishes a good deal of informations. In *śivijātaka* (2), trasnplantation of eye is mentioned[127]. *Kuṣṭha* and *Kilāsa*[128] are mentioned among diseases; *unmāda* is also there[129], ghee etc. were applied on wounds for healing[130]. Some herbs processing such actions are also used[131] *Mantras* as well as drugs were used in treatment of diseases[132]. *Duṣta vrana* (chronic ulcer) was very obstinate[133] Blood-letting through venesection was practised by *vaidyas*[134]. There is also mention of the extraction of śalya[135] Dhanwantari is named as example of great physician[136]. Maternity room was constructed entirely of iron according to the method prescribed in *Bhūtavidya*[137]. *Rasa, guna, vīrya, vipāka,* are mentioned in relation to herbs[138] In *Agastyajātaka* there is mention of *bāla-cikitsā*[139], *yakṣas* and *grahas* destroy *ojas* and thereby reduce life-span[140].

Śāntıdeva (7th cent A D) emphasıses on preservatıon of one's health by taking proper medıcınes and puttıng on cloths etc [141]

In the fıeld of Āyurveda, the followıng authors representıng the Buddhıst tradıtıon are noteworthy —

1 Vāgbhata
2 Ravigupta
3 Nāgārjuna
4. Candranandana

1. Vāgbhata- the two works, the *Astāngasangraha* and the *Aṣṭāngahrdaya*, are authored by Vāgbhata Apart from being based maınly on the saṃhitās of Caraka and Suśruta, they contaın many Vıdyās and mantras as well as a number of medıcal formulae prevalent ın Buddhıst tradition.[142]

2 Ravıgupta — Ravıgupta, son of Durgagupta, a Buddhıst scholar composed '*The Sıddhasāra*' a work of compendıous nature, whıch also contaıned a nighantu at the end It ıs referred to ın the commentarıes of candrata, candranandana, aruṇadatta, vıjayaraksıta, nıścalakara, ādhamalla and śıvadsa sena whıch ındıcates ıts ımportance and authorıtatıveness

The Sıddhasāra[143] contaıns 31 chapters and the *Sıddhasāra-nıghantu* as appendıx The fırst four chapters are on *Tantra, dravyagana annapānavıdhı* and *arısta*. From *ch*. 5 to *ch* 25 ıs *Kāyacıkıtsā* dealıng wıth ındıvıdual dıseases begınnıng wıth *jvara* and endıng wıth *śopha* Further chapters are on *Vrana, Śālākya, Vıṣa, Rasāyana — Vājīkaraṇa, Kumāratantra, Pañcakarma* and *Kalpa* Thus, though ın the ıntroductory chapter (1 1), the tradıtıonal eıght *angas* of Āyurveda are enumerated In further dealıng *Rasāyana — Vājīkarana* are combıned ınto one and the gap ıs fılled up by *Pañcakarma* It ıs to be noted that *Yogaśataka* (of Nāgārjuna) also descrıbed the eıght *angas* ın the same way [144] From thıs ıt ıs evıdent that the Buddhıst tradıtıon does not emphasıse on Vājīkarana whıch ıs made part of Rasāyana whıle Pañcakarma ıs gıven promınence by allottıng ıt as an ındependent anga though the old tradıtıon ıncludes ıt wıthın Kāyacıkıtsā

Wujastyk has trıed to establısh famılıal lınk between Ravıgupta and Vāgbhata[145]

The date of Ravıgupta ıs fıxed as 650 A.D after Vāgbhata and before Mādhava[146]

3 Nāgārjuna — Nāgārjuna ıs a legendery fıgure ın Buddhıst tradıtıon A number of works are attrıbuted to hım ın dıfferent perıods[147] *Yogaśataka*[148] by Nāgārjuna ıs a representatıve work of thıs tradıtıon It contaıns uttaratantra after the eıght angas are descrıbed As saıd earlıer, here *Pañcakarma* ıs enumerated as one of the eıght *angas* of Āyurveda Apart from the *Yogaśataka*, the followıng works of Nāgārjuna are ıncorporated ınto Tıbetan Tanjur —

2. *Avabheṣajakalpa*
3. *Ārya rāja nāme vaṭikā*
4. *Ārya mūlakoṣamahausadhāvalī*

4 Candranandana — In Tibetan Tanjur, the following works of Candranandana are incorporated —

1 *Vaidya-Aṣṭāngahrdayavṛtti*
2. *Vaidya-Aṣṭāngahṛdayavṛttau bhesajanāma-paryāyanāma*
3 *Padārthacandrikā.... Aṣṭāngahṛdaya-vivrti*

The last one is well known[149] Recently his work on nighaṇṭu (*Madanādi Nighaṇṭu*) has come to light[150]



Ajātasatru in Conversation with Jīvaka
(Courtesy Indian Institute of History of Medicine, Hyderabad)

Educational Centres

As medicine for Buddhists was an important tool for missionary service to humanity and animals, it was a popular subject of teaching in curriculum of *Vihāras* and *mahāvihāras*. King Milinda was trained in *Cikitsa* alongwith other subjects All the universities of the country had medicine as important or compulsory subject of teaching. The university of Takṣaśilā was quite renowned for this where Atreya was the great teacher and Jīvaka went there a long way from Rājagṛha to have training in the subject He got proficiency in Medicine as well as Surgery[151].

The University of Nālandā established during the reign of Kumaragupta (413-455 A.D) and patronised later by Pāla Kings, had medicine as one of the compulsory subjects of teaching[152] Possibly in later periods, it also developed section on Rasaśastra. Though there is no evidence to prove that medicine was taught at vikramaśilā university[153], it may be presumed that, along with *tantra, Rasaśāstra* also florished there in theory and practice because these two are Intimately related. The *Siddhas* who were well versed in *tantra* were actual founders and promoters of *Rasaśāstra.*



Excavated Northern Gate of the Vikramasila University at Antichak, p o Patharghatta, Distt Bhagalpur (Bihar)

(Courtesy. R K Chaudhary's monograph The University of Vikramasila, The Bihar Research Society, Patna)

Royal Patronage — the Buddhist tradition flourished side by side with vedic traditions under the patronage of kings like Aśoka, Kaniṣka and Śrī Harsa They extended their empires and established vihāras in far off places As Buddhism spread to other Asian countries, Indian Medicine also acommpanied the monks and nuns visiting and settling there Finding of medical mss from excavatious in different regions such as Central Asia supports this hypothesis.

The accounts of Chinese travellers — Fahian, Huan Chwang and Itsing — and also of Al-Biruni throw ample light on the Buddhist tradition in those periods

Jaina Tradition

Like Buddhists, Jainas had a distinguished tradition of medicine which was known as *'prāṇāvāya'*. *Prāṇāvāya* was the twelfth *Pūrva* under *dṛṣtivāda,* the twelfth division of the *(dvādaśāṅga) āgama* It is called *'Pūrva'* as it was revealed prior to Mahāvīra, the last tīrthaṅkara, by earlier saints It was the science of vitality (*Prāṇa*) maintaining the health of body and mind It dealt with mental disciplines, dietetics and drugs and covered all the eight aṅgas of Āyurveda. Jaina saints had to preserve their health and treat their sickness themselves and as such were required to attain requisite knowledge of hygiene and medicine[154]

Jainas were more stiff in observing the rules of conduct particularly non-violence. In medicine too, they avoided alcohol, honey and meat totally and because of this the Jaina physicians modified the formulations accordingly They used mainly plants and minerals as drugs. They were practical and believed in curing the disease with effective tried medicines rather than going into philosophy and fundamental doctrines *Vaidyas* travelled with medicine-chest as well as instrument-case and managed both medical and surgical cases.[155]

The *Ācārāṅgasūtra* mentions body parts such as foot, ankle, knee, thigh etc (1.1.2). According to it, the animate beings are produced as follows —

1. From eggs (as birds etc.)
2. From a foetus (as elephant etc.)
3. From a foetus with an enveloping membrane (as cow etc.)
4. From fluids (as worms etc)
5. From sweat (as bugs etc).
6. By coagulation (as ants etc)
7. From sprouts (as butterflies etc).
8. By regeneration (as man etc)

The nature of men and plants is similar Both are born, grow old, have animation, fall sick, need food, decay and die (1 1 5). Plants are mentioned in different contexts Fruits, bulbous roots, stalks, shoots, berries and powdered fruits of certain plants are not to be accepted by monks or nuns (2 1.8) The list includes *mango, grapes, ginger, mustard stalks, aśvattha, kapittha, kadamba, coconut, kaśeru, lotus, sugarcane,*

bilva etc. Garlic is also there (also 2 7 2) A man should not ease nature in woods of *Aśoka, Punnāga* etc (2 10) Fragrant flowers like *campaka, nāga, priyangu, jāti, tilaka, pāṭalā* etc are also mentioned (*Kalpasūtra* 3.5). Among metals, gold, silver, copper, iron, tin, lead and brass are mentioned (2.6 1) Different edible substances (2.1.4) and liquors (2.15.4) are also mentioned

There was a high sense of cleanliness of body, speech and mind. Personal hygiene was carefully observed. Water was used after straining (1 1.3). There are detailed instructions about easing nature (2.10).

At one place the following sixteen diseases are enumerated — boils, leprosy, consumption, epilepsy, blindness, stiffness, lameness, humpbackedness, abdominal enlargement, dumbness, swelling, anaemia, trembling, crippledness, elephantiasis and diabetes (1.6.1) In another context (2.2 1) gout, dysentery and vomiting are mentioned.

Some indication about method of treatment is also found. Surgical operation with sharp instruments, treatment by charms (pure and impure) and durgs were prevalent (2.13).

In *Uttarādhyayana Sūtra*, disease is recognised as one of the troubles (2.1). To prevent illness was one of the purposes of begging food and drink (26.32-33). Rules for disposal of excrements and evacuation are prescribed (24 15, 26 30) Food of four kinds (19 30) and liquors (19 70, 34.14) are mentioned There is mention of eye disease and fever in a story (20 19). Methods of treatment such as spells, roots, emetics, purgatives, fumigation, anointing of the eye are enumerated (15 8), *Mūlakarma* is mentioned as one of the *Utpādana doṣas* (24 12f) It is said that the walking monk should look with his eyes the space of yuga (four hastas) *CS* prescribed exactly the same in the code of conduct (SU 8 18) Another parallelism with *CS* is that the eight kinds of development regarding touch (36 20-21) are the same in both with the difference that they are named as eightfold *vīrya* in *CS* (*SU*. 26 64)

Kinds of plants are mentioned as *vrksa, gaccha, gulma, latā, vallī* and *trna* (36 95) In this context, many plants are mentioned (36 96-106, also see 18 5, 19 17, 52 20 37, 22 44, 32 20, 34 4-13,19)

Inorganic substances including metals, antimony, stones, mica, sulphur are enumerated (36 73-78) There is no mercury

Similarly animals are detailed with their classification (36 127-246)

In *Sūtrakṛtānga*, certain body parts are mentioned (2.25) Substances used in cosmetics and some domestic appliances are enumerated (1 4 2.7-12) *Lodhra, tagara* and *uśīra* were main substances used in cosmetics Seeds are said as of four kinds — those generated at the top, at its root, at its knot and at its stem (2 3 1) Parts of plant such as root, bulb, stem, branches, twigs, leaves, flowers, fruits and seeds are mentioned (2.3.5). Some plants are also mentioned (2.27) alongwith cereals and pulses such as *masūra, mudga* etc (2.2 63).

The only authoritative text available on the *prāṇāvāya* tradition of medicine is *Kalyāṇakāraka*[156] by Ugrādityācārya who was contemporary of Amoghavarsa I, the Rāṣṭrakūṭa king, (815-877 A D)[157] He was disciple of Śrīnandi and composed the work at Rāmagiri hill in Veṅgi, a famous place in Trikaliṅga[158] He has mentioned the peceding authors in different branches of Āyurveda as follows.—

1. *Pūjyapāda* — *Śālākya*
2. *Pātraswāmī* — *Śalya*
3. *Siddhasena* — *Visa* and *graha* (bhūta)
4. *Daśarathaguru* — *Kāyacikitsā*
5. *Meghanāda* — *Bālaroga*
6. *Siṃhanāda* — *Rasāyana* — *Vājīkaraṇa*
7. *Samantabhadra* — All the eight branches (*Aṣṭāṅga*)[159].

The text contains twenty chapters, uttaratantra consisting of five chapters and two appended chapters (*pariśiṣtādhvāya*) on *arista* and *hitāhita* (wholesome-unwholesome diet) The first three chapters deal with basic concepts, the fourth and the fifth describe food and drinks including *anupāna* The sixth chapter is on personal hygiene (*Dinacaryā*, *Rātricaryā* and *Rtucaryā*) including *Rasāyana* The seventh chapter is on preliminaries of treatment, arrangements in hospital and patients' examination From the eighth chapter starts *Kāyacikitsā* The eighth, ninth and tenth chapters deal with *vātaroga*, *pittaroga* and *kapharoga* The *ch* on *pittaroga* includes *raktapitta*, *pradara*, *visarpa*, *vātarakta*, *jvara* and *atisāra* Then come *mahāmavas* (great diseases) which are *prameha*, *kustha*, *udararoga*, *vātavyādhi*, *mūdhagarbha*, *arśa*, *aśmarī* and *bhagandara* dealt with in chs 11-13 the 14th chapter deals with *upadamśa*, *ślīpada* and *ksudraroga* In the 15th is *śālākya* 16th - 18th again deal with *Kāyacikitsā* The last one also describes *grahas* and their treatment The 19th is on *viṣaroga*. The 20th chapter describes general things about medicine including *aristas* and *marmas* *Bālaroga* is dealt with in the ch 12 after *mūdhagarbha* In *Uttaratantra* *ch* 21 is on application of *ksāra*, *agni* and *jalaukā* and venesection 22-23 *chs* deal with *pañcakarma* 24th chapter deals mercury and its processing in detail The last (25th) chapter is on *Kalpas* (on *harītakī*, *śilājatu* etc)

The author has glorified *cikitsā* in the following words "*Cikitsā* is for destroying sins and promoting virtues It is means for (happiness) in both the worlds There is no penance greater than *Cikitsā*[160]

Thus, Jaina tradition, to a considerable extent, contributed to promotion of health and medicine The Jaina literature is quite vast and one can find, on thorough survey, a rich material relating to medicine

Jainas believed that diseases were results of sinful acts and as such paid greater attention on righteousness to prevent disease (and death) rather than on alleviation of suffering by external means (*Uttarādhyayana* II 33) They preached tolerance of pain and thus were passive recipients of medical treatment rather than active promotors of the same like Buddhists It was the social need and demand that dragged the Jainas in

the field of medicine as physicians or authors like *Pūjyapāda* and *Ugrādityācārya* Moreover, the basic foundation (the four noble truths) is the same with Buddhism and medicine and as such the propounder of the former emerged as *mahābhiṣak* which role he played not only as philosopher but also as physician practically and sincerely involved in amelioration of human suffering. Medicine proved to be an effective tool in expansion of Buddhism like that of Christianity There are instances when people opted conversion to Buddhism only to utilize the opportunity of being treated by great physicians like Jīvaka. Over and above, the Buddhists had to maintain big *Vihāras* on organizational lines under which medicine was one of the important programmes. Alongwith Buddhism, Indian Medicine, travelled far and wide and thus had sown its seed in other countries. Indigenously too, it flourished under the patronage of the Buddhist rulers who established and propagated it as their mission. Buddha, as Gandhi in the modern world, had reverence to the sick and treated him as exception to all the rules. The compassion and service to the sick was unique feature of Buddhism

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2 *MV*. VIII. 1
3 *DK*. 1.215
3a *MV*. VIII 20 1, CV V 13 1, VIII. 1 1-5;
3b *CV* V 14 3-5, VIII 8 1-2, 9 and 10. (also *MV*. I 25 12)
3c. Ibid. VIII 101-5
3d Ibid V 27 2-6, 31.1-2
4 *MV* I 39 1, *CV*. X 17.1
4a. *MV* VI 1.1-2,
5 Nissag XXIII, also *MV*. VI 15.10
cf '*Pañcasāra*' of Suśruta (*SS* U 39.254-55) used in *Viṣamajvara*. There is consists of milk, sugar, honey, ghee and Pippali, also see *AH*. *Ni* 2.13
6 *MV* VIII, 15 7
7 Ibid VIII 26 5-8
7a Ibid VIII 26 1-4 Buddha says — whosoever, O *Bhikkus*, would wait upon men, he should wait upon the sick
8 *DK* 1 12
9 Ibid
10 VII 1,
11 Ibid VI 22 1-2
12 Ibid
13 VIII 1 4
14 Also see G N Mukhopadhyaya's *History of Indian Medicine*, Vol III, pp 681-744
15 With Eng Tr C Kunhan Raja, the Theosophical Society, Adyar, Madras
16 15 8
17 20 10
18 15 2
19 12 6, 24 1

20 Ed P L. Vaidya, Mithila Institute, Darbhanga, 1958
21. Int. X.
22. *Ch.* 28
23. *Ch.* 31
24. *Ch.* 48, 52
25. *Ch.* 49
26. *Ch.* 92
27 *Ch* 94, cf Lehādhyāya, *KS*
28. ed. P.L. Vaidya, Mithila Institute, Darbhanga, 1959
Dated — between 200-350 A.D (Int XI)
29. *Ch.* 1
30. *Ch.* 2
31. *Ch.* 8; also Ch. 21
32. *Ch.* 9. Here the words '*Vaidya*' and '*ātura*' are used.
33 *Bhaisajyāni kvāthyamānāh sthālikām bhañjate ch* 23
34. *Ch.* 26.
35. The word '*upasthapikā*' denotes the female nurse. Perhaps the nuns of the Buddhist order worked as female nurse for the patients This is in contrariety of Āyurvedic tradition where only male nurse (*upasthātā*) is mentioned (*CS SU.* 9.3).
36. *Ch.* 37
37. Winternitz: HIL, Vol II, pp. 168-70
38. Ibid, P. 171
39. Jagannath Pathak, ed. Motilal Banarsidass, Delhi
40 Swami Dvarakadas Shastri, ed Bauddha bharati, Varanasi, 1979 The Eng Tr by T W Rhys Davids (See SBE, Vol 35,36, reprint, Motilal Banarsidass, Delhi 1965) also goes upto book seven
41. *MP.* 1.1.1.
42. 1.1.9.
43. 1 1.19
44. 2.1.1
45. 2.2.1
46. 2.2.3. *Pañcamūlas* are described in *saṃhitās* of both Caraka and Suśruta The common ones are *Brhat* and *Laghu pañcamūlas* making jointly the *daśamūla.*
47. 2.3 11.
48. 2.3.6; also 2.4.1
49. 2.4.1
50. 3.6.1; also 4 1 27 where surgical operation, cauterization and appplication of alkali are prescribed
51. 3.6.2
52. *Cāturmahābhautikena Kāyena* — 3.7 9, 4.8 59 *cf CS. Sa* 2 31 (*bhutaiścaturbhiḥ sahitaḥ*)
53 4.1.23
54. 4.1 44
55. 4.1.45, also 6 2.7
56. 4.1.47

57. 4.1.57
58. 4.1.58
59. Ibid.
60. 4 2.10
61. Also 4.3.7, 5.25; 5 1 10
62. 4.3.7
63. 4.3.10
64. Ibid.
65. 4.5.4
66. 4 2.15, 3.5
67. 4.5.6
68. 4 5.10
69. 5 1.14
70. 5.2.7
71. Ibid.
72. 5 3.12
73. 5.3.20
74. 5.4.10
75. P.L. Vaidya, ed. Mithıla Instıtute, Darbhanga, 1958.
76. Int P VII.
77 *Ch* 5 (P 34), 7 23, 34, 51, 11 9, *Ch* 19 (P 200), *Ch 22 (P 225), 23 6, Ch 26* (P 307)
78. *Ch.* 6 (P. 53).
79. *Ch.* 14 (P. 137)
80. *Ch.* 6 (49); 26 (P 310, 311)
81. *Ch.* 3 (P.11), *Ch.* 6 (P.50).
82. *Ch* 7 (P.72)
83. *Ch.* 7 (P.72)
84. 20.4
85 P.L Vaidya, ed. Mıthıla Institute, Darbhanga, 1960
86 Int. P.X
87 *Ch.* 5 (P 93)
88 *Ch.* 10 (P 142), 12 (P 162), 25 (P 263)
89. 4.58
90 *Vıhārāh ārāmapuspopaśobhıtāscaṅkramavanopetāh śayanāsano-paṣṭabhāh Khādyabhojyānnapāna — glānapratyayabhıṣajya — parıṣkārapūrṇāh, sarvasukhopadhānapratımaṇḍıtāḥ (Cḥ* 66 (P 202)
91. *Ch.* 5 (P 91)
92 3.133
93 *Ch.* 17 (P 207), *Ch.* 26 (P 267)
94 *Ch.* 21 (P 235)
95. *Ch.* 5 (P 84), *Ch* 18 (P 213)
96. *Ch.* 5 (P 84)
97. Ibıd
98 *Santı tu Hımavatı parvataraje catasra osadhayah tadyathā-prathamā sarvavarṇarasasthānānugatā nāma, dvitīyā sarvavyādhıpramocanī nāma,*

tṛtīyā sarvaviṣavināśinī nāma, caturthī yathāsthānasthitasukhapradā nāma. Ch. 5 (P. 91) This reminds of the four miraculous herbs described in the *Rāmāyaṇa* (See *ch.* on epics)

99. Ibid.
100. *Ch.* 18 (P. 213).
101. *Ch.* 6 (P. 100, 102)
102. ed. Bagchi S., Mithila Institute, Darbhanga, 1967. The text was translated into Chinese in 412-426 A.D. and thus is dated before that.
103. Ch. 2 (P.4).
104. 4.49-50
105. 6.12,15
106 4.76
107. Evidently here *hemanta* and *grīṣma* include *śiśira* and *Vasanta* respectively.
108. 27.5-13.
109. 8.1-4
110. ed. Johnston, E.H. Punjab University, Lahore, 1935
111. Idem. 1928.
112. BC. 1.43 (*Cikitsitaṃ yacca cakāra nātriḥ paścattadātreya ṛsirjagāda.)* Evidently it shows that the compedium in Medicine by Ātreya (commonly knows as *Carakasaṃhitā*) was quite popular then.
113. Ibid. 10.20
114. Ibid 1.16
115. SN. 5.31
116. Ibid. 9.13.
117. Ibid 10.55, 12 25, 15.65, 18 9
118. Ibid 8.3-5.
119. Ibid 14.1-9.
120. Ibid. 16 40-41
121. Ibid 16.59-69
122. Ibid 16 93-94.
123. Ibid. 18 7
124. Ibid 11 53
125. ed. Vaidya, P.L Mithila Institute, Darbhanga, 1959.
126. Int. P. IX.
127. P 11
128. P. 167
129. P 107
130 P. 185
131. P. 54
132. P. 80
133 P. 47
134. P. 48, 50
135. P. 346
136. P. 238
137. P. 233
138. P. 182

139. P. 40
140. P. 43, 238
141. *Śikṣāsamuccaya*, 13 (*eṣā rakṣātmabhāvasya bhaıṣajya-vasanādıbhıh*).
142. AH. U. 5.50-51
143. ed. Emmerıck R.E., Franz Steiner Verlag GMBH, Weısbaden, 1980 (Vol.I), 1982 (Vol II).
144. *Yogaśataka*, 5
145. Wujastyk D.: Ravigupta and Vāgbhata. B S O A S , XIVII, Ch 1, 1985, PP. 74-78
146. Emmerick, op. cit. Int. P.1
147. See *ch.* on Nagarjuna
148. (a) ed. Dash Bhagwan, Dharmsala, Indıa, 1976.
(b) ed. Fılliozat J., Pondıchery, 1979
149. See ch. on commentators
150. See title on *Dravyaguṇa*
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158. Ibıd, 20 84-87
159. Ibid 20. 85-86
160. Ibid 7.32

7

OTHER NON-MEDICAL SOURCES

P.V. SHARMA

Besides Vedic and non-Vedic traditions there are certain other non-medical works which stand as definite historical landmarks and also shed light on the status of medicine during the respective periods Of these, Pānini, Kautilya, Kālidāsa, Varāhamihira, Bānabhatta, Bhavabhūti and Rājaśekhara are important ones.

Pāṇini (7th Cent. B.C.)

The *Aṣṭādhyāyī* of Pāṇini gave a concrete shape to the discipline of Sanskrit grammer Later on Kātyāyana (3rd cent B C) improved upon it and introduced certain usages which were adopted during his time. The *sūtras* of Pāṇini were again annotated by Patanjali (2nd cent B.C.) in his famous *Mahābhaṣya.*

Āyurveda is mentioned as one of the branches of knowledge in the *Ukthādi* (4.2.60) and *Kathādi gaṇas*. Patañjali, however, mentions it as '*Vaidyaka*'. The teachers of Āyurveda, Bharadvāja and Ātreya, are mentioned in *Aśvādi gaṇa* (4.1.110) while the disciples of Ātreya — Agniveśa, Parāśara and Jatūkarṇa — are mentioned in *Gargādi gaṇa* (4.1.105) In *Kārtakaujapādi gaṇa* (6.2.37) mention is made of Suśruta and his disciples.[1]

For counting of seasons, there are two systems in Āyurveda — one commonly known as *Śiśira, Vasanta, Grīṣma, Varṣā, Śarad* and *Hemanta* and the other replaces *Śiśira* by *Prāvṛt,* the latter system is followed particularly in consideration of the aggravation of *doṣas* and their elimination. Pānini seems to be acquainted with both of these as he mentions *Prāvrt* as well as *Śiśira* alongwith other seasons [2] He also uses the Vedic names of months as *nabhas, nabhasya* etc

In the field of basic concepts the five specific qualities — *śabda, sparśa, rūpa, rasa* and *gandha* of the five *bhūtas* are enumerated in the *Rasādi gaṇa*[3] (5.2.95). Likewise, the three dosas *Vāta, Pitta* and *Ślesman* are mentioned in *Sidhmādi gana*[4] (5 2 97) The importance of *Vāta* among the three *doṣas* and the prevalence and severity of the diseases caused by it is indicated by its separate mention in a *sūtra* (5 2.129). Of the pharmaological concepts, *guṇas* (properties), *Rasas,* and *Virya* are also mentioned [5]

Plants which form the major group of the medicinal substances are divided broadly into two groups according to size — *Oṣadhi,* and *Vanaspati*[6]. Which were already recognised in Rgvedic times Later on these were subdivided into two (*Vānaspatya* or *Vṛkṣa* and *Vīrut*) and thus four groups were established.[6a] Pānini mentions these too[7] *Oṣadhi* is a *jāti* (class) of herbs which made '*auṣadha*[8] consisting of more than that.

'*Trna*' (grasses) is also mentioned[9] Out of the five parts leaf, flower, fruit and root are frequently mentioned[9a]

A large number of medicinal plants are found in Pāṇini's work in different *gaṇas* such as *Harītakyādi* (4.3.167), *Plakṣādi* (4 3.164) *Palāśādi* (4 3.141), *Bilvādi* (4.3.136), *Kumudādi* (4.2.80) etc. *Pīlvādi gaṇa* (5.2.24) contains plants mostly of arid zone, while *Śarādi gaṇa* (4.3.144) consists of grasses. *Kisarādi gaṇa* (4 4.53) consists of aromatic plants like *tagara, guggulu* etc.

Some medicinal substances are mentioned under dye. *Lākṣā* and *rocanā* are mentioned by Pāṇini (4.2.2) while Kātyāyana has added *nīlī, haridrā* and *mahārajana (kusumbha)* in this group. Aquatic plants — water lily, reed and salix — are mentioned together (4.1.87) Sometimes places were named and identified by the prevalence of some particular plant as the city '*Varana*' was so known as being in the vicinity of the plants *Varaṇa,* Kāśika mentions some flowering plants in connection with pastimes prevalent in the eastern region (2.2 17. 3 3.109, 6 2.74) such as *uddālakapuṣpabhañjikā* (plucking flowers of the *uddālaka* tree), *Śālabhañjikā* (the same from *śāla* tree). *Varaṇapuṣpa-pracāyikā* (collecting flowers from the *Varaṇa* tree). Somewhere, it is read as '*Vīraṇa*' but '*Varaṇa*' seems to be better.

Some metals such as gold[10], silver,[11] iron[12] and tin[13] are found *Śilājatu* and *Sūta* (mercury) are also mentioned in the chapter on *Liṅgānuśāsana* (111)

Cultivated cereals are mentioned in the beginning of 5 2, such as *Vrīhi* and *Śāli* (5.2.2), *Yava, Yavaka* and *Ṣaṣṭika* (5 2.3), *Tila, Māṣa, Umā, Bhaṅgā,* and *Anu* (5.2 4) *Umā* (Linseed) and *Bhaṅgā* (Indian hemp) are fibrous plants but recognised as *Dhānya*[14] That these were cultivated is proved by the rejection of wild grasses[15]

Dietary preparations are mentioned in *apūpādi gana* (5 1 4) and *ardharcādi gaṇa* (2.4 31). *Yavāgū* (gruel), so popular in medicine, is mentioned (4 2.136) It is also known as *uṣṇikā* (5.2 71) as it is taken hot and has less cereal

Patañjali commenting on the *sūtra* (5 1 77) particularly refers to the trade of liquorice (*madhuka*) and black papper (*Marica*) by land route[16]

The following plants are mentioned in sūtras of Pāṇini:—

1. *Soma* (3 2 90, 4.2 30, 4.137, 5 4 125, 6 3 27, 131, 7 2 3
2. *Muñja* (3.1 117)
3. *Vrīhi* (301 148 etc)
4. *Kuśa* (4.1 42 etc)
5. *Darbha* (4 1 102)
6. *Pīlā* (4 1 118)
7. *Aśvattha* (4.2 22, 3.48)
8. *Kāśa* (4 2.80 etc.)
9. *Kumuda* (4.2 80)

10. Varaṇa (4.2.82)
11. *Naḍa* (4.2.87)
12. *Vetasa* (4.2.87)
13. *Bilva* (4.3 136)
14 *Palāśa* (4.3.141)
15. *Śamī* (4.3.142)
16. *Śara* (4.3.144)
17. *Tila* (4.3 149)
18. *Tāla* (4.3.152)
19. *Umā* (4.3.158)
20. *Plakṣa* (4.3.164)
21. *Jambū* (4.3.165)
22. *Harītakī* (4.3 167)
23. *Kulatthaka* (4.4.3)
24 *Mudga* (4.4.25)
25. *Māṣa* (5.1 7)
26. *Ṣaṣṭika* (5.1.90)
27. *Śāli* (5.2.2)
28. *Yava* (5.2.3)
29. *Yavaka* (5 2.3)
30 *Bhaṅgā* (5 2.4)
31. *Aṇu* (5.2.4)
32 *Pīlu* (5.2 24)
33 *Kāṇḍīra* (5.2.111)
34 *Śevala* (5.3.84)
35. *Kustumburu* (6.1.143)
36. *Kāraskara* (6 1 156)
36a. *Kattṛṇa* (6 3.100)
37. *Kiṃśuluka* (6 3.117)
38. *Śiṃśapā* (7.3 1)
39. *Nyagrodha* (7.3.5)
40. *Sidhraka* (8.4.4)
41 *Ikṣu* (8 4 5)
42. *Āmra* (8.4 5)
43 *Kārṣya* (8.4 5)
44. *Khadira* (8.4 5)
45 *Pīyukṣā* (8 4 5)

Kātyāyana, in addition, has mentioned the following plants

1. *Alābu* (5 2 29)
2 *Irikā* (8.4.6)
3 *Mirikā* (8.4 6)
4. *Karkandhu* (1.1 64)
5. *Guggulu* (4.1.71)
6. *Nīlī* (4.1 42)

7. *Pippalī* (4.1 41)
8. *Veṇuka* (4.2.138)
9. *Śaṇa* (5.2.29)
10. *Haridrā* (4.2.2)

In *Vārttika*, the term '*Phalapākaśuṣa*' is used for annual herbs as they dry up after their fruits ripen. This has been described as the characteristic of *oṣadhi*[17]. In this continuation in context of flowers *mallikā, navamallikā, pāṭalā, kadamba* and *aśoka* while in roots *vidārī, aṃśumatī, bṛhatī, sālva* are mentioned by Kāśika. In *harītakyādi gaṇa* (4.3.167) apart from *harītakī, kośātakī, nakharañjanī, ḍoḍī, śvetapākī, arjunapākī, kola, drākṣā, dhvañkṣa, gargarika, kaṇṭakārikā* and *śephālikā* are read. Patañjali (2nd cent B C.), the great annotator on the Pāṇini's work, has added a number of plants such as *āmalaka, udumbara, kovidāra, khadira, candana, tumburu*[18] triphalā, drākṣā, priyañgu, burbura[19], bibhītaka, brāhmī, śāla[20], *saptaparṇa, suvarcalā* etc.

Weight and Measure

Almost all the units of weight and measure are mentioned in different *sūtras* which are the same as adopted by the Āyurvedic Saṃhitās[21] For measurement of grains etc. wooden pots were used which were known as *druvaya*[22] and because of this measure of weight was known as '*druvaya-māna*[23] Patañjali distinguishes the different measures explaining the terms *unmāna, parimāṇa* and *pramāna*[23a] He has also used the term '*aktaparimāna*' for accurate measure[23b]. Kāśikā (2.4.2) says that system or weight and measure was founded by Nanda (the king of Magadha)

Pharmaceutical Preparations

Kaṣāya is a type of preparation (6 2 10). *Kaṣāya, Kalka* and *Hima* are mentioned in *Ardharcādi gaṇa* (2.4.31) but of them *cūrna* was quite popular[24] Fermentation is referred to in connection with Soma[25] Besides this, other fermented preparations like *maireya, madya, surā*, etc. are found[26] Kāśikā adds here *āsava* made of flowers and fruits. The word '*śṛta*' is used for '*kvatha*' in *CS*. For this Pānini has made a sūtra *srtam pāke* (6.1.27); Patañjali, however, has restricted it for milk and ghee This is, in fact, extension of the sense. Kāśikā (3.2.81) mentions the habit of taking different beverages in different regions such as the people of Gāndhāra like to take *kaṣāya* (decoction or infusion), those of *Uśīnara* take milk while the *Bāhlīkas* are accustomed to *Sauvīra* (Sour gruel). In the Eastern region they take *Surā* (8.4 9)

The proces of eliminating seeds as from *amalaki* etc is known as *niskulākaraṇa* or *niṣkoṣaṇa* (5.4 62). *CS* has used the former word (*CS*. Ci 1 1 66)

Anatomy

The names of organs and parts of the body have been mentioned in different contexts and under different sūtras[27] such as *śākhā*[28] (extremities), liver[29], *vasti*[30]

(urinary bladder), heart[31] *etc. The word 'nāḍī'* is used once (3 1.30) in the sense of 'tube' but, at another place, it is used alongwith *'tantrī'* in the sense of body part (5.4.159). Kāśikā interprets *'tantrī'* as *'dhamanī'* [32]

Diseases

Arśas (piles)[33], *Vāta (vyādhi)* and *Atisāra*[34] (diarrhoea) are mentioned prominently There is also upatāpa[35] meaning disease in general exemplified by *Kuṣṭha* and *Kilāsa*[36]. At one place, *Pravāhikā* (dysentery) *Pracchardikā, vicarcikā,* and *śirorti* have come[37]. *Rogāpanayana*[38] (taking away the diseases) is the term for *cikitsā (Kit nivāse rogāpanayane ca).*

Different types of *jvara* (fever) such as periodic *(dvitīyaka, caturthaka),* allergic *(viṣapuspaka, kāśpuṣpaka)* and that producing cold *(śītaka)* and heat *(uṣṇaka)* are mentioned[39]. Skin disease such as *pāmā, dadru, vipādikā, sidhma* and *kaṇḍū*[40] are mentioned frequently In *Kathādi gaṇa* (4 4.102) *Kuṣṭha* and *Kuṣṭhavid* are mentioned together which shows the prevalence of the disease and existance of specialists treating the same. *Pātresammitādi gaṇa* (2.1.48) contains intestinal parasites. *Hṛdroga* and *hṛllāsa* are also there (6 3.50-51) The Atharvavedic disease *'ksetriya'* has been dealt independently and is interpreted as that which can be treated only in other birth[41] *Pilla,* an eye-disease, is added by Kātyāyana (5.2.33)

Linguistic Peculiarities

Attempts have been made to search for the un-Pāninian words in the Āyurvedic Samhitās to prove their existence in pre-Pāninian period but this is not completely reliable because the existence of Pāninian forms of words is not the definite proof that they follow Pānini as he did not create the words like a potter but only systamatized them which were already in use beforehand. For instance, the word *'bhiṣakpāśā*[42]' is evidently a Pāninian form in the sense of censure like *'vaiyākaranapāśa*[43] which only indicates that such words were in use since long beforehand and were adopted by Pānini as such.

Some words used in the ancient treatises of Āyurveda are found in Pānini's work but in a different sense For instance, the word *Vānaspatya* of the *Carakasaṃhitā* (*SU.* 1) denotes tree of medium size (smaller than *Vanaspati*) while Pānini has used it in the sense of 'group of trees[44] For the earlier denotation, *'Vānaspatya'* is replaced by *'Vṛksa'*[45]

Similarly, the word *'Vyavāya'* is used in Āyurvedic Samhitā in the sense of 'sexual intercourse' while in Pānini's work it is for 'obstacle or intervention[46] Caraka has used the word *'Phenodvāmī'* (emitting foam) (*CS* Ni 8 7 (1), Ci 10 9) while in the same sense Kātyāyana has mentioned the developed form *'phenāyate'* (3 1 16)

The world *'bhaiṣajya'* is derived from *'bheṣaja'* (5 4 23) Pāṇini has framed the word *'agadaṅkāra'* for physician (6.3 70).

The term '*Pañcāṅgula*' (meaning castor plant) can be ratified only if 'dāru' in the concerned *sūtra* (5.4.114) means 'plant' as well otherwise is would be '*Pañcāṅguli*'.

Pāṇini reproduces Atharvanic tradition not only by repeating '*Ātharvaṇa*' or *Ātharvaṇic*[47] texts but also by presenting the materials in their original Atharvanic form such as '*pīlā*' a drug and '*kṣetriya*' the disease These terms did not continue in the later Āyurvedic literature. '*Trikakud*[48]' the abode of añjana is also placed as it was there The two branches of *Atharvaveda, Mauda* and *Paippalāda*, are often mentioned [49]

It may be possible that these were current in the Vedic tradition while Āyurveda coined other ones for these.

As said, *Vāta, Pitta* and *Kapha* — the three *dosas* contituting the basic concept of Āyurveda — find mention in the *Aṣṭādhyāyī* either in *sūtras* or *gaṇas* In the context of *nimitta* (5.1.38), probably he meant generally conjunction and omens that is why Kātyāyana considered it necessary to add *Vāta, Pitta, Kapha* there which are *nimitta* (cause of health and disease) recognised in Āyurveda. In 5.2.81, *Prayojana* is interpreted as cause as well as effect. Pānini here probably meant *Tridoṣa* besides the aggravating factors like flowers of poisonous plant etc.

Thus Pāṇini presents the picture of Āyurveda in its initial steps when Atharvanic practices and ideas were still dominant and the rational medicine was establishing its foot. Looking to this aspect, the idea of placing Pāṇini in Pre-Buddhist age looks logical.

Kauṭilya's Arthaśāstra

Kautilya's Arthaśāstra is a valuable document of cultural data including status of medicine and physicians There is a great divergence of opinion among scholars about its date Some taking Kautilya as the minister of Candragupta Maurya (321-297 B C.) place him as his contemporary while others not accepting it fix his date as 3rd Cent A D [50] Anyhow, it represents the culture of India in the period between Pāṇini and Guptas

The *Cikitsaka* (Physician) had a very important place and enjoyed high royal privilege The king, as a routine, met the physician in the forenoon[51] He also received free land from the state[52] His salary was two thousand *paṇas*, while that for astrologer was one half of this[53] Physicians also accompanied the military expedition duly equipped with surgical and other instruments, remedies for poisons, ointments and dressing materials[54]. Physicians commanded such high confidence, respect and freedom in society that the state misused his position sometimes against enemies and employed spies in the guise of physicians [55]

There was strict control on medical profession In diseases like leprosy and insanity physician's certificate was honoured [56] At the same time, severe punishment

was awarded in case of carelessness, suppression of facts and administration of adulterated or substituted drugs.[57] There was punishment for ill-treatment of patients in the society[58]. There was also provision of medical leave to the employee[59].

Patients suffering from disease of infectious nature like ulcerating leprosy were segregated and such cases, as rule, had to be brought to the notice of civil authorities. Physician without observing this and treating such cases was punished.[60]

Of the eight natural calamities *maraka* (epidemic) was one which was to be tackled with traditional (*aupaniṣadic*) measures consisting of drug treatment on one side and incantation etc. on the other.[61] *Aupaniṣadic* measures and *Aindrajālika* (sorcery) are said as instruments.[62] Probably the latter is also called as *Māṇava-Vidyā*[63] or *Jambhakavidyā*[64] exhibiting a number of magical feats such as disappearance, making people asleep etc

Use of poison (*Rasa*) to kill enemies was common.[65] Formulation having narcotic poison was known as '*Madana*' *rasayoga* (or *madana yoga*)[66]. The person administering it was known as '*Rasada*'[67] The media for this were such as umbrella, water vessel, fan, slippers, seats and carriages and the agents such as cooks, bather, masseur, spreader of bed, barber, beautician, water-fetcher etc.[68]

The test of poison on animals (birds) and fire is described[69]. The treatment of poison was done by knowers of *Jāṅguli* (*Jāṅgulīvid*) or Atharvan[70].

In Āyurvedic treatises of Caraka (redacted by *Dṛdhabala*), Suśruta and *Vāgbhaṭa* almost the similar description (media of poisoning and tests) is found

Kaumārabhṛtya (expert in *Kumārabhṛtyā*-paediatrics) should look after the obstetrical problems and safe delivery of the child[71] In the rear portion of the palace ***harem*** was built alongwith space to accomodate ladies during pregnancy and severe diseases. Outside there should be place for children under the care of the officer (*Kumārādhyakṣa*)[72] There was punishment for inducing abortion[72a]. Severing of ear and nose was one of the punishments[73] which later on required intervention of surgeons According to this necessity Rhinoplasty and Otoplasty were developed Suśruta has described them in detail[74] which remained as model for centuries As mentioned earlier, there were also military surgeons. In case of inflicting injury to bleed there was punishment but not if the eliminated blood was impure It shows that blood-letting in surgical practice was prevalent

In the chapter on secret means (14 177 1), a number of diseases are mentioned such as *Kustha, Unmāda, Prameha, Śosa, Visūcikā and jvara* Surprisingly '*Vātavyādhi*' here is the name of a scholar and not of the disease

The concept of 'balanced diet' by the terms '*Sarvagraha*' (total quantity) and '*Parigraha*' (quantity of individual items)[75] is already in Āyurveda The *Arthaśāstra* describes it as '*Āryabhakta*' (ideal diet) *Āryabhakta* consisted of the following.—

Rice — 1 *Prastha* (640 gms)
Pulse — 1/4 of rice (160 gms).
Salt — 1/16 of pulse (10 gms)
Fat — (ghee or oil) — 1/4 of pulse (40 gms)
Meat — 20 palas (80 gms) (prepared with fat, salt and spices).
Curd — 1/2 prastha (320 gms)
Vegetable (fresh) 1½ times of meat (200 gms)
(dry) double of meat (160 gms.)[76]

The term '*Viśikhā*' is used to denote the locality of town where the wealthy nobility resided[77] Suśruta has named one of the chapters as '*Viśikhānupraveśanīya* (*SU.* 10) which contains instructions as to how a medical graduate should inter into '*Viśikhā*' to take up the profession

Plants and Drugs

Plants are mentioned in different contexts Cultivation of plants was encouraged. Brāhmaṇas were donated land for raising a forest of *soma* (*Brahmasomāranya*)[78] which was of so much use in sacrifice. The land donated to physicians was probably also meant for that. There was a 'Plant-Science' (*Vṛkṣāyurveda*)[79] developed which provided knowledge about physiology, pathology, horticulture and treatment of plants.

Sītādhyakṣa (Agriculture Superintendent) was required to posses knowledge of *Kṛṣitantra* (Agriculture) *Sulba* (measurement) and *Vṛkṣāyurveda* (Plant Sciences)[80]. There is a systematic cultivation of plants including the medicinal ones such as *Pippalī*, *Vālliīphala* (cucurbitaceous plant), *Gandhabhaisajya* (aromatic plants) like *uśīra* and *hribera.*[81].

In the context of forest products (*Kupya*), a classified list has been provided which gives insight to the scientific study of plants. These groups are as follows —

1 *Sāra-daru-varga* (Heartwood or timbers)-*Śaka*, (Teakwood), *Dhanvana, Arjuna, Tilaka* etc.
2. *Veṇu-varga* (Bamboos) — Different types of bamboo.
3. *Vallī*-varga (Weak plants) — *Nāgavalli* (betel), *Vetra* (cane) etc
4. *Valka-varga* (Barks) — *Mūrvā, Śaṇa Atasī* etc.
5 *Rajjubhāṇḍa* (Roapy fibres) — *Muñja, Balvaja* etc
6. *Patra-varga* (leaves) — *Tālīśa, Tāla* and *Bhūrja,* etc
7 *Puṣpa-varga* (flowers) — *Palāśa, Kuṅkuma, Kusumbha* etc
8. *Auṣadha-varga* (medicinal plants) — Different tubers, roots, fruits etc
9. *Visa-varga* (poisonous plants) — *Vatsanābha* etc

As for dry substances, they were preserved carefully in store (*kosthāgāra*) under the charge of a superintendent Here also the materials were stored in a classified way as follows·—

1. *Dhānya* (cereals) —Rice, *Priyaṅgu, Udāraka, Varaka, Yava, Godhūma, Tila, Yavaka, Mudga, Māṣa, Kalāya, Masūra, Kodrava.*

2. *Sneha* (fats) — Ghee, oil, fat and marro. Among oils those of *Atasī, Nimba, Kuśāmra, Kapittha, Tila, Kusumbha, Madhūka, Ingudī* etc. are mentioned.
3. *Kṣāra* — Different forms of sugar.
4. *Lavaṇa* (Salts)
5. *Madhu* (Honey)
6. *Śukta* (Vinegars)
7. *Phalāmla* (fruity sours) — *Vṛkṣāmla, Karmarda, Āmra, Āmalaka, Mātuluṅga, Badara, Sauvīraka*[82], *Paruṣaka, Vidula* etc.
8. *Dravāmla* (liquid sours) — curd, sour gruel etc.
9. *Kaṭuka* (Pungents) — *Pippalī, Marica, Śṛṅgavera, Ajājī, Kirātatikta*[83] *Sarṣapa, Kustumburu, Coraka, Damanaka, Maruvaka, Śigru* etc.
10. *Śāka* (vegetables) — dried fish, meat, tubers, root, fruit, potherb etc.

In fort also, there was built a store-room for market drugs (*Paṇyabhaiṣajya-gṛha*) where all necessary drugs and other accessories were stored in sufficient quantity which could be used for many years However, from time to time, the old ones were replaced with the fresh ones. The storable substances, besides drugs, consisted of all fats, alkali, salt, dried vegetable, poisons, barks, heartwood etc.[84] Plants were used for the following purposes apart from other ones:—

1. Exorcism and magical feats [85]
2. Treatment of disorders.[86]
3. Rearing silkworms in their leaves [87]
4. Textile fibres were derived from bark, cotton, hemp and linseed besides wool [88]
5. Making bows, bowstring and arrows [89]
6. As dye, *Nīla, Mañjiṣṭhā* and *Lākṣā* were mainly used for this.

Plants and their products such as *Candana, Aguru,* spices and aromatic plants, timbers, bambeos, barks and wine were articles for taxation and revenue.[90]

Trade was routed through land and water [91] of the land routes, the two-*Haimavata* (running to north) and *Dakṣiṇāpatha* (running to south) were important ones.[92] Trade in drugs also followed the same.

Pharmaceutical preparations

Kvātha (decoction) and *Cūrṇa* (Powder) are prescribed forms of which the former is more potent [93]

Liquors were controlled by the Superintendent of wines (*Surā*) *Surā* is described as of six types — *Medaka, Prasannā, Āsava, Ariṣṭa, Maireya* and *Madhu* and the methods of their preparation are also detailed *Surākiṇva* (Yeast) was the main factor (*Sambhāra*) No distillation is mentioned *Ariṣṭa* was specially used as drug under the direction of physicians while others were common drinks The cleaning was done by adding lime mixed with some plant decoction [94]

Among inorganic substances, metal (*Dhātu*) and ores (*Rasa-Dhātu*)[95] are mentioned. *Dhātus* are six — gold, silver, copper, iron, tin and lead. There is also *śilajatu*. *Mūṣā* (crucibles) were used in metallurgical processes. Superintendent of mining operations is said to possess knowledge of *Sālvaśāstra* (measurements), *Dhātuśāstra* (metallurgy), *Rasapāka* (Alchemy) and *Manirāga* (Gemoloy). There was also one *Lohādhyakṣa* (Superintendent of base metals) treating metals and their alloys other than gold and silver[96] Though Hingula[97] (cinnabar), a natural compound of mercury, was in use, mercury itself is not mentioned in the *Arthaśāstra*. There is also one chapter on gems[98].

Weight and Measure

The *Arthaśāstra* was introduced a new unit of weight known as Dharana[99] It also prescribed weights made of iron or stone obtained from Magadha[100] or Mekala[101]. Weighing scale and measuring pots (*tulāmānabhāṇḍa*) were kept in store (2.31 15). Measure of time is also there[102]. *Kāla* (time) is said to be of the nature of cold, heat and rains.[103]

Other observations

While **describing** the merits of hunting it is said that it is a sort of exercise which eliminates ***Kapha, Pitta,*** fat and sweat and also makes the body firm.[104]

'Caraka' is mentioned as a class of attendants working under Suvarṇādhyaksa By association of *Dhmāpaka* (blower) and *Pāṃśudhāvaka* (sweeper or cleaner), Caraka seems to be peon or general attendant

Among punishments two things are conspicuous one, after feeding *Yavāgū* (liquid gruel) one is not allowed to urinate and the other heating the person after giving him *Snehapāna*[105] (intake of ghee).

In the last chapter, *Tantrayuktis,* thirty two in number are described [106]

An important contribution of the *Arthaśāstra* is '*āśumṛtaka-parīksā*' (post-mortem examination) by which the causes of death such as hanging (*Udbandha*), strangulation (*Pīḍana-niruddoccvāsa*), drowning (*Udakamrta*), poisoning etc were determined [107]

Thus, in conclusion, it may be said that in the period of the *Arthaśāstra* there was no use of mercury or distillation Secondly, on the **basis** of parallelism between the *Arthaśāstra* and the *Suśruta-samhitā*, it can be said that the redactor of the latter has followed the former The *Tantrayaktis* are in the *Uttaratantra* which are later additions and are probably based on those in the *Arthaśāstra*

Bāṇabhaṭṭa

Bānabhaṭta at one stage joined the company of King Harsavardhana (606-648 A.D.) **and** has also glorified him in one of the introductory verses in his work

'*Harṣacarita*' which is actually based on the biography of King Harsa. Thus, being contemporary of King Harsa, Banabhatta belonged to 7th Cent A D.

Bana's works — *Harṣacarita* and *Kādambarī* — are not only poetic fictions but are authentic historical documents, particularly the former one, which provide valuable information on the cultural and scientific positions

Because of the importance of the maintenance of physical and mental health, the knowledge about body, hygiene and remedial measures were considered necessary Hence Āyurveda was prescribed as one of the compulsory subjects in the curriculum of the teaching institutions As said earlier, Nālandā University had arrangements for teaching Āyurveda, in the same way, in Kadambari, the prince Candrāpīda, received instructions in Āyurveda, use of mantras and treatment of poisons along with other arts and sciences.[108]

"The young physician named '*Rasāyana*', well-versed in *Aṣṭāṅga Āyurveda*, attached to the King's palace by familial tradition and *Paunarvasava* (belonging to the school of Punarvasu Ātreya) was one of the physicians attending King Prabhākara Vardhana. This description is quite significant and throws light on many aspects of medicine such as —

1 The name of the physician 'Rasāyana' indicates the importance and popularity of *Rasāyana* therapy.

2. The vaidyas were trained in all the eight parts rather than a single speciality of Āyurveda Looking to the demand, by then the *Astāṅgahṛdays* was composed combining all the parts together in one text, which is testified by the accounts of the Chinese traveller itsing

3 The school of medicine (*Paunarvasava*) was dominant in comparison to that of surgery (*Dhānwantara*)

Bāna has used the word (*Paramānu*)[109] as Caraka has used it in the sense of body-cells The term '*Śirā*' is mostly used for blood vessels[110] A graphic description of varicose vein is also given[111] the development of body and appearance of sex characters in adolescence is very well described[112] as well as of the old age[113]

'*Jatharānala*' is mentioned which digests everything ingested[114] The mention of blood as having colour like that of *indragopa*[115] (red insect) reminds the Caraka's description in this context [116]

The concept of health as self-normalcy is ideal as well as practical[117] Daily routine (*Dinacaryā*) as beneficial and prescribed for health was followed[118] *Sadvrtta* is detailed in *Śukanāsopadeśa*[119]

Among diseases, *sannipāta* was very severe and incurable and as such was called '*mahāvyādhi*[120] (great disease) *Jvara* including *dāhajvara*[121], *śītajvara*[122] and

gambhīrajvara[123] is mentioned frequently The illness of King Prabhākaravardhana is described in detail who was probably suffering from *sannipātajvara* having hyperpyrexia, headache, unconsciousness, delirium and dyspnoea as main symptoms[124]. *Rājayakṣmā* is called '*dīrgha roga*[125] (chronic disease having a long chain of complications). Besides, *pāṇḍu*[126] *śvayathu*[127], *medoroga*[128], *ardita*[129], *ākṣepa*[130], impurity of blood[131] *śvitra*[132], *unmāda*[133] *mūrchha*[134], *apasmāra*[135] are mentioned Thus these disease were common problems.

Fever was treated with *Laṅghana*[136] (Lightening). Sudation was also done particularly in acute fever[137]. In aggravation of *kapha*, pungent drugs were employed[138]. Kṣaya, śoṣa and agnimāndya were treated with *śilājutu*[139], *rasa*[140] (mercurial preparations) and *śuṇṭhī*[141] respectively. The management of the case of sannipāta is described vividly in the context of the illness of King Prabhākaravardhana[142]. It shows the method of treatment witt drugs as well as incantations.

There were frequent occurrences of wound and accidental haemorrhage in battles which were treated with proper bandaging and application of drugs[143] Venesection was also practiced in cases of inflammatory swellings[144]

The term '*aśrusrotas*' is mentioned for lachrymal ducts[145] Of eye-disease conjuctivitis[146], swelling[147], timira[148] (defects of vision) are mentioned which were treated with application of *añjanas* and *vartts*[149] *Siddhāñjana* was common which was applied with wooden stick (*śālākā*) but on improper use destroyed the eyes[150] Likewise, excessive application of irritant drugs caused defects of vision[151] In swelling of eyes, realgar (*manahśilā*) was applied on lids[152] Hot water fomentation was done in cases of conjuctivitis [153]

A detailed picture of the pregnant woman and the labour room is found in both the *Harsacarita* and the *Kādambarī*[154] There are also indications of forceps delivery and caesarian section.[155]

After the child was born, he had to pass through a number of *Saṃskāras* from time to time. '*Saṣthījāgarana*[156] was a common rite observed on the sixth day during the Gupta period

Viṣa and its counteracting with *agada* is also mentioned [157] *visa-vegas* are also found[158] *Kālakūṭa*, the dreadful poison, produces nacrotic effect and disturbed vision,[159] Poisoning was treated with drugs as well as incantations[160] This branch of learning was known as *gāruda*[161] and the person expert in this was called '*Jāṅgulika*' *Mayūraka*, one of the friends of *Bāna*, was *Jāṅgulika*[162]

There was also belief in invisible agents causing disorders[163] The persons treating such cases were called 'Narendra[164]

Rasāyana[165] and *Rasa* are also mentioned The former dealing with elixirs while the latter meant probably mercurial compounds,[165a] *Vaidyas* were mostly engaged in these two[166]

Bāna roamed frequently and considerably and observed the Nature critically with the sharp intelligence and and as such has given the picturesque description of plants in different localities and seasons. He gives a list of eighty eight plants growing in the Vindhya region[167] Among the articles presented by the King of Assam[168] there were several products of plants growing there[169] including aguru

Bāṇa was a minute observer of Nature and as such has described changes taking place in plants during different seasons[170] Informations about a large number of plants are obtained through his works[171] and so about inorganic substances. *Dhātuvāda* (Alchemy) was also a matter of interest in society. One of the friends of Bāṇa was expert in this.[172] The *Rasāyana* not processed properly and as such causing *Kālajvara*[173] seems to be some inorganic preparation.

Apart from drugs procured from Nature, market drugs were also common.[174]

Different pharmaceutical preparations were in use[175], *cūrṇa, kvātha, taila* and *ghrta*[176] being common For King Prabhākaravardhana, when he was ill, *kvāthas, tailas* and *ghṛtas* were being prepared in a portion of his apartment. *Puṭapāka* was also common [177]

That *Tantric* practices were also prevalent and had strong hold on society (medicine not being exception) is evident from the characters like Bhairavācārya[178] and the old Dravida religious man [179]

Thus Bāṇa's works belonging to the Post-Gupta period furnish information about the developing class of general physicians and increasing influence of Tantricism and mercurials on medicine

References and Notes

1 *Sauśrutapārthavāh, Suśrutasya Prthośca Chātrāh-Kāśikā*
2 4 3 17, 26, 43, 6 3 15
3 Also see *Mahābhāṣya* 5 1 19
4 Kātyāyana adds in 5 1 38 that the word *Vātika, Paittika* and *Slaismika* (and also *Sānnipātika*) are used in the sense of pacification and aggravation, Patañjali says honey and ghee as destroying *ślesman* and *pitta* (6 1 12) Also Kāśikā 3 2 53
5 Ibid 5.1 122, 133, 6 2 120
6 *Vibhāsauṣadhivansapatibhyah* (8 4 6) *Dūrva* and *Śirīsa* are given as examples of *osadhi* and *vanaspati* respectively
6a *CS SU.* 1 71
7 *Vrksa* (4 3 135) and *Virut* in *Nyankvādi gaṇa* (7 3 53) Agrawal takes *Vṛksa* as a synonym of *Vanaspati (Pāninikālīna Bhāratavarsa,* P 207)

8. *Oṣadherajātau* (5 4.37); also 6 3 132
9. 5 4.125; 6.3.100

9a. 4.1.64

10. 4.3.153
11. 4.3.154
12. 3.4.82
13. 4.1.154
14. *Umābhaṅgayorapi dhānyatvamāśritameva — Kāṣikā* (5 2 4) Also see Kātyāyana's *Vārttika* on 5 2 29 (*alābūtilomābhaṅgābhyo rajasyupasaṅkhyānam*)
15. *Tṛṇānāṃ bhavanaṃ kṣetraṃ ityatra na bhavati-Kāśikā*
16. *Sthālapathaṃ madhukam, sthālapatham maricam.*
17. *Osadhyaḥ phalapākāntāh — CS SU.* 1.72
18. Kāśikā has wrongly interpreted it as fruit of *Tindukī* (6.1 143)
19. Distinguishing between *Khadira and Burbura,* it is said that both are fair-looking and small-leaved but the former has *Kaṅkaṭa* (epithelial flakes on bark).
20. In example of 3 3.18, *Śālasāra* and *Khadirasāra* are mentioned, the former makes the first item of the group of drugs known as *Śālasārādi*. Kāśikā has given example of *Candanasāra*
21. 5 1 26, 33,34,35,53; 4 102, 4 2 110
22. *Māne vayaḥ* (4.3.162)
23. *Amara* 2 9 85

    Pānini has termed '*nimāna*' as measure of value (5 2 47)

23a 5 1 29

23b 1 4 13

24. 4 4 23, 6 2 134
25. 3 2 90

26 6 2 70, 3 1.100, 2 4.25. Brewery had become a profession The person involved therein was called '*āsutīvala*' (*Śaundika*) (5 2 112) Agrawal (p 128) takes '*Śauṇḍika*' (4 3 76) as the tusk-shaped apparatus for distilling liquors but this sūtra is meant for 'having come from' and not 'the manufacturing process', thus '*Śaundika*' would mean 'having come from *sundika* (*Śundikād āgatah-Kāśikā*) *Sundika*' may be some place like *Sandika* (4 3 92), *Sthandila* etc read in the *Śundikādi gana* It is doubtful if distillation actually was done in those days Had it been so, it would have been described in the Āyurvedic treatises in connection with preparation of wine but nowhere it is seen

27. 4 1 55, 3 63,65, 5 1 6

28 5 3 103

29 2 4 11

30. 5 3 101

31 6 3 150

32 Dhamanīvacanah Tantrīśabdah

36 Kāśıkā
37. 3,3 108 (*Pravāhikā* again comes ın 5.4.49)
38. 5.4.49 (*Rogāccāpanayane*)
39. 5.2.81 (*Kālaprayojnādroge) Kālo dıvasādih, Prayojanaṃ Kāraṇaṃ rogasya phalaṃ vā.*
40. 5.2.97, 100, 3 1.27
41. *Kṣetrıyaḥ parakṣetre cikıtsyaḥ* (5.2.92)
42 CS (SU 30 83) has saıd quacks as sımılar to '*Kālapāśa*' (death-noose) whıch perhaps led Pāṇıni to make the sūtra The word '*bhıṣakpāśa*' ıt used by Vagbhaṭa (AH. U. 40.76)
43. 5.3.47
44. 4.1.85 (See Patañjalı's comm.).
45. 4.1.35
46 '*Vyavāya*' ın 1 1 8 and 6 2 166 ıs ınterpreted by Patañjalı as '*Vyavadhāyaka*'.
47. 4.3.133: 6 4.174
48. 5.4.147
49. 1.3.49
50. Wınternitz. III, P. 633,662
51. 1.14.18, Here the physıcıan is gıven the first posıtıon among others like kitchen-superıntendent and astrologer. Comparing wıth the latter physicıan had a higher positıon gettıng hıgher emoluments
52. 2.17.1
53. 5 91.3
54. 10 150-52 3 (*Cıkıtsakāḥ śastrayantrāgadasnehvastrahastāḥ pṛṣṭhatastiṣṭheyuḥ*)
55. 1 13.17; 4.79 4, 5.89.1; 7 122-123.17 etc
56. 3 75 8
57. 4.76.1; 2.55 36
58. 3 75 18
59. 3.70 14
60. 3 67.11; 2.55.36
61. 4 78 3; 7 103-107 4 8.130-132.4; 9 145-146 7
'*Aupanıṣadika*' ıs dealt wıth ın book XIV There is also such chapter ın *Kāmasūtra,* Caraka (*SU.* 4.4) also has once used the word '*Upanısad*' (*Kalpopaniṣadi*) for the sectıon contaınıng formulatıons Pāṇını (1 4.70) also uses '*Upanısad*' ın the same sense
62. 2 34 18. Both are ıncluded ın the lıst of sıxty four arts '*aupanıṣadıka*' gradually developed ınto means of sexual satısfactıon knows as '*Kaucumārayoga*' (see *Kāmasūtra,* ch 3 15) *Bṛhatsamhıtā* (ch. 75) has named ıt 'Kāndarpıka'
63 4 80 5 Because of undersırable acts ıt ıs called feats of *mānava* (bad man)' *Mānava'* here means bad man (see Bhānujı Dīksıta's comm on *Amara* 2 6 42, 106)
64 1.7.11: also 5 70 2, 14 178.2. Probably *māyāyoga* (4 78 3) ıs also the same
65 9.143 5, 144.6, 11 160-161 etc
66. 1.13 17, 4 78 3, 79.4, 122-123 17, 13.173 3
67. 1 7.11, 5 89.1

68. 1.7.11, cf. the lıst of attendants is CS. SU 15
69. 1.15.19, 16.20
70. 4.78.3. '*Jāṅgulika*' is the term of *Viṣa-vaidya* (Toxicologist) see *Amara.* 1.9.11)
71. 1.12.16. See '*Sūtikā*' ın 13 172.2
72. 1.15.19; cf. *Kumārāgāra* and *Sūtıkāgāra* ın *CS* and *SS.*
72a. 4.86 11
73. 4.85.10, 88.13
74. See *ch.* on Suśruta
75. *CS. Vi.* 1.21. (4)
76. 2.31.15
77. 2.29.13; 30.19
78. 2.18.2; 3.65.9
79. 2.40.24
80. 2.40.24 (*Sītādhyakṣaḥ kṛṣıtantra-śulbavṛkṣāurvedajñaḥ*)
81. Ibid.
82. It is a type of badara mentıoned by Suśruta
83. It ıs not pungent but as there is no separate group for bitters it ıs placed here.
84. 2.20.4 (*Navena anavam śodhayet*)
85. 14.177.1, (178.2, 3;
86. 14.179.4
87. 2.27.11, Such silk was known as '*Patrornā*' *Nāgavṛkṣa, nikuca, bakula* and *vaṭa* are mentıoned for thıs.
88. 2.39.23
89. 2 34.18 '*Mūrvā* was the chief plant for makıng bowstrıng (*jyā*) that ıs why ıt ıs known as '*maurvī*' (made of *mūrvā*)
90. 2.38.22; 5.90.2
91. 2.22.6. (*Sthāpalpatho vāripathaśca vaṇıkpathaḥ*)
92. 7.116.12. Suśruta (Cı 4 29) mentıons both types of aromatıc drugs-*Haımavata* (grown ın North) and *Dakṣınāpathaga* (grown ın South) Ḍalhana ınterprets '*Haımavata*' as 'grown ın *uttarāpatha*' He also mentıons drugs growıng in each of these regıons
93 14.177.1 (*Sarveṣāṃ vā kvāthopanayanam, evam vīryavattaraṃ bhavatı*)
94. 2.41.25. Shama Sastry wrongly ınterprets '*Kaṭaśarkarā*' as 'granulated sugar' Kangle also has mıstaken ıt as some plant For *Kaṭaśarkarā* also see *SS SU* 11.11
95. 2.22.6
96. 2.28.12, 2 30 14 (*mūkamūṣā*)
97. 2 38.22 (*Harıtāla* and *manahśılā* are also here)
98 2.27 11
99 Suśruta also mentıons ıt (*SS.Cı* 31 7) There ıs also one '*Śādhārana Yoga*' (Ibıd Ci 4 4)
100. The stony mortars and pestles of Magadha (partıcularly Gaya) are stıll famous.
101. 2.35 19
102. 2 36 20
103. 9 135-136.1 *Cf. SS SU* 6 7 (*Ta ete Śitoṣṇavarṣalaksaṇāh*)
104. 8.129.3

105 4.83 8
106 15.180.1 Suśruta also described the same *tantrayuktis* in the similar way in the last chapter, *Dṛḍhabala* probably follows Suśruta
107. 4.82.7 Suśruta prescribes emergency treatment in such cases (See. *SS. SU.* 27.20.22)
108. *K.* 232
109. *H.* 425.428
110. K 72,133,642 (Superficial veins-*unnamatā sirājālakena*)
111. *H.* 269
112. *K.* 234-235, 89
113. *H.* 175, K. 126
114. *K.* 62
115. H. 211 (*indragopakarucā rudhireṇa*)
116. *CS. SU.* 24 22
117. *H.* 275 (*Svāṃ prakṛtimāpannam svastham*)
118. *K.* 44-51
119. *K.* 313-337
120. *H.* 93, 270,274, 453; K.U 89
121. *H.* 93
122. *K.* 498
123 *H.* 267
124. *H.* 269-71
125 *H.* 454-455; 354, also *Raghu* 19.48
126 *K.* 455, 665
127. *H.* 336
128. *K* 318
129 *H.* 453
130 *K* 93
131 *K* 328
132 *H* 88,399
133 *H* 331, K. 319
134 *K* 33
135 *H* 93
136 *H* 340
137 *H* 88, also *Māgha* 2 54
138 *H* 398
139 *H* 88
140 *H* 454
141 *H* 340 *Guggulu* was specific drug for obesity, see Catu 208
142 *H* 264-269
143 *H* 324, 338 (*Vividhavranabaddhapaṭṭakaśataih*) The Linen like outer flakes of *bhūrja* were also sometimes used for dressing in emergency
144 *H* 339
145 *H* 312
146. *K* 329 (*Locanotkopa*)
147. *H.* 433

148. *K.* 325
149. *K.* 313-314
150. *K.* 643
151. Ibid.
152. *H.* 433
143. *H.* 339
154. *H.* 213, 217 K. 194-195, 204-205; 209, 217-22, also see *Raghu* 10.68
155. *H.* 211. 455
156. *K.* 228; also V S. Agrawal, Kadambari, P 81
157. *H.* 355
158. *K.* 463
159 *K.* 319, H. 92
160. *K.* 314
161 *K.* 157
162. *H.* 74.
163 *K* 328, 492; *H.* 75
164. *K.* 192 (*Mahāgrahagrasteva viphalanarendrasamāgamā*)
165. *H.* 42
165a. *Rājaśekhara* (9th Cent A D) explicily hints at the *Rasādhikāra* (texts on Rasaśastra) of *Nandikeśvara* (Nandi) (Kāvyamīmāmsā, ch. 1)
166 *H.* 354 (*Rasāyana-Rasābhiniveśinaśca vaidyavyañjanāḥ*)
167. *H.* 406-421
168 *K.* 369; 382-387
169 *H.* 386-88
170 See H 142-143, 79-88
K 422-242
171 For details see P V. Sharma *Indian Medicine in the Classical Age,* PP 134-212
172 *H* 75 (*Dhātuvadavid Vihangamah*): also *K.* 644. *Rājaśekhara* utilised *Dhātuvāda* in Poetics (transmutation of *śabdālaṅkāra* into *arthālaṅkara* (*Kāvvyamīomāmsā,* ch 13) It was one of the sixty four arts (See *Kāmasūtra*)
173. H 644 (*Asamyakkrtarasāyanānītakālajvarena*)
174 H 267. Kālidāsa (*Raghu,* 6 57) informs about *Lavanga* (cloves) imported from other countries (*dvīpāntara*) For adulteration and substitution of drugs see *Yājñavalkya smrti, Vyavahāra* 245-46 alongwith *mitāksarā comm*
175 *H* 42, 457, K 645
176 *H* 266
177 *H* 86, also see Bhavabhūti's *Uttararāmacarita,* 3 1 (*Putapākapratīkāśo Ramasya karuṇo rasah*)
178 *H.* 172-79
179 *K.* 636-648

7.1

TRAVELLERS' ACCOUNTS

P.V. SHARMA

Travellers were visiting this country from time to time and left accounts of their travels which furnish valuable data about the contemporary culture including status and practice of medicine Of them the three Chinese travellers — Fahian, Yuan Chwang and Itsing — and lastly, Al-Biruni, an Iranian muslim would be taken up here

Fahian

Fahian came to India in 399 A D during the reign of Candragupta II Vikramaditya and travelled in the country for fourteen years. He arrived here by land route through Gobi desert and returned by sea-route via Ceylon leaving India at Tmralipti, an important sea-port then In his travel account, he had made observations on various aspects of Indian culture Commenting on Pataliputra (modern Patna), the capital of Gupta emperors, he says —

"The nobles and householders of this country have founded hospitals within the city, to which the poor of all countries, the destitute, crippled, and the diseased, may repair They receive every kind of requisite help gratuitously Physicians inspect their diseases, and according to their cases order them food and drink, medicine or decoctions, everything in fact that may contribute to their case When cured they depart at their convenimece "[1]

By this description it is clear that the hospital at Pātaliputra was a big and of referral type where patients from all the corners of the country came for treatment. For poor the entire treatment including diet was free of charge

Yuan Chwang

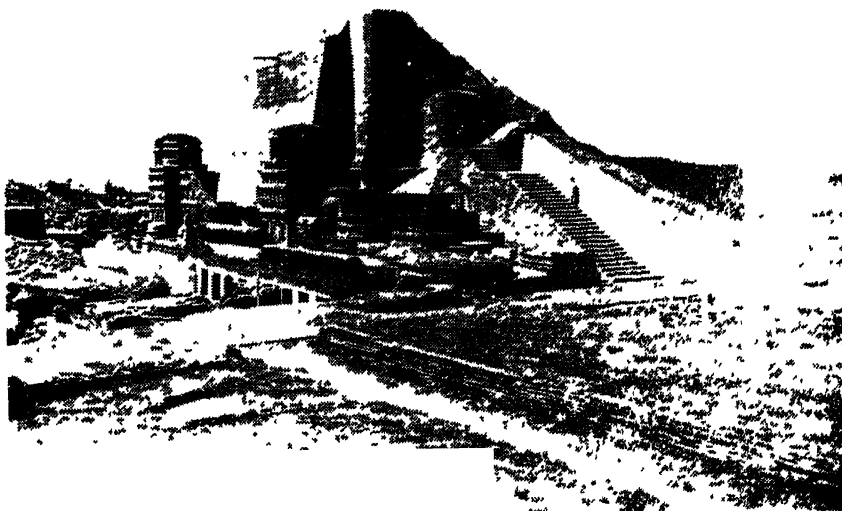
He travelled in India during the period of fifteen years (629-644 A D) when King Harsavardhana was reigning with his capital at Kannauj He travelled in the entire country and passed five years (635-640 A D) in the Nālandā University as a student and later as teacher under the direction of Śīlabhadra He was also for some time with King Harsa and was highly honoured by him

Yuan Chwang has given detailed description of the Nālandā University He says that there Medicine (*Cikitsāvidyā*) was one of the five compulsory subjects, the other four being Grammer and Lexicography, Arts and Crafts, Logic and Philosophy[2] Further he adds — "The Brahmins learn the four Veda treatises The first called show "Longevity" (The Āyurveda) which tells nourishing life and keeping the constitution in order "[3] He has mentioned further the names of the other three Vedas but here partially *Rgveda* is replaced by Āyurveda

On methods of treatment he comments — "everyone who is attacked by sickness has his food cut off for seven days In this interval the patient often recovers, but if he can not regain his health he takes medicine Their medicines are of various kinds, each kind having a specific name Their doctors differ in medical skill and in prognostication [4]

Evidently here he referes to the *Lańghana* prescribed in acute fever when no medicine is to be givne.[5]

Making observations on Multan, he says that, among the temples of other religions, there was a magnificient temple of *Sun-deva* (Sūrya). The image was of gold ornamented with precious substances, it had marvellous powers and its merits had extended far. There was a constant succession of females performing music, lights were kept burning all night, and incense and flowers were continually offered The kings and grandees of all India gave precious substances as religious offerings and erected free rest houses with food, drink and medicine for the sick and needy At this temple there were constantly 1000 pilgrims from various lands offering up prayers All round the temple were tanks and flowery woods making a delightful resort [6]



Excavated site of Nalanda University
(Courtesy A Guide to Nalanda
by A Ghosh)

1-Tsing

1-Tsing left China in 671 A.D. and returned in 695 A.D. Thus spending nearly twenty five years in travelling different countries. In India he reached in 673 A.D. just after the reign of King Harsavardhana ended He also studied at the University of Nālandā.

1-Tsing has left valuable records about the customs and traditions, arts and sciences of India.

Commenting on the practice of walking (*caṅkramaṇa*) he says that as excercise it is good for health. They either went away or strolled quickly along the corridors. A place was also demarcated and constructed as *'Caṅkrama'* where people walked like that built for Lord Buddha at Rājagṛha. On advantages of walking he adds — "Firstly, it cures diseases and secondly, it helps to digest food.. . If anyone neglects this exercise, he will suffer from ill health, and often be troubled by a swelling of the legs, or of the stomach, a pain in the elbows or the shoulders A phlegmatic complaint likewise is caused by sedentary habits. If any one, on the countrary, adopts the habit of walking he will keep his body well, and thereby improve the religious merit [7]

He emphasises on light diet and intake of food according to one's appetite. Day-break is generally the time of phlegm, when the juice of the night is still hanging about the chest, being as yet undispersed. Any food taken at this time disagrees.

He adds — "If one be indisposed, one should investigate the cause, and when the cause of ill-health has been discovered, one should take rest When health is recovered one will feel hungry, and should take food first at the next light meal "

On the nature of disease, he says that not only is it called a disease when one has a headache and lies in bed, but also the cause of a disease brought about by the discomfort caused by eating. When sickness has not been cured by medicine, one may eat food at any time according to the advise of the physician who, after examining the voice and countenance of the diseased, prescribes according to the medical science [8]

Medical science, he adds, is one of the five sciences (*Vidyā*) in India and has eight sections as follows — 1. *Śalya* 2. *Śālākya* 3. *Kāyacikitsā* 4 *Bhūtavidyā* 5 *Agadatantra* 6 *Kaumārabhṛtya* 7 *Rasāyana* and 8. of the methods of invigorating the legs and body [9] These eight arts formerly existed in eight books, but lately a man epitomized them and made them into one bundle All physicians in the five parts of India practise according to this book, and any physician who is well versed in it never fails and they give relief to others as well as benefit themselves.[10]

Further he says that some of the medicinal herbs in India differ from those of China, but the herbs like *harītakī, kuṃkuma, hiṅgu, Baross* camphor, cardamom and clove are used similarly in both the countries.[11]

Tracing the cause of disease, he observes that excessive eating (sometimes excessive labour) or by eating before the previous meal is digested (*adhyaśana*?) is the cause of disorder which results in cholera morbus (*Viṣūcikā*?) bringing in discomfort and swelling of abdomen. In such condition only rich can survive. The object should be to cure the disease easily and to prevent the others For this study of Medicine is necessary by which one can benefit others as well as himself.[12]

1-Tsing studied medicine and as suh speaks about the concepts of health and disease. He says that health of the living depends on the condition of the four great elements (*Mahābhūtas*). Imbalance of earth, water, fire and air causes heaviness, secretion, heat and dyspnoea respectively He informs that Lord Buddha himself preached a Sūtra on the Art of Medicine. According to common tradition, these may be understood in forms of *Vāta, Pitta* and *Kapha,* the last one combining both earth and water.

He adds that to find out the cause of illness one should examine oneself in the morning and if some abnormality is detected, then one should abstain from eating In case of indigestion, vomiting may also be induced He emphasises on fasting as an effective cure which does not need any etfort or drug He advocates an ointment (*snehana*) and fomentation (*svedana*) in case of painful spot. He awakens confidence in people by saying that each man is himself the King of physicians and any one can be Jīvaka.[13]

He also praises the effectiveness of a pill formulation '*San-teng*' (*Samatritaya*?) containing *harītakī, śuṇṭhī* and sugar in equal proportions [14] Even *harītaki* alone, if taken regularly, can keep man healthy for the whole life [15]

After disease is cured, one should take newly boiled rice with lentil soup To alleviate cold, one should take *Trikaṭu*. He says that, according to medical system, anything of acrid or hot flavour removes cold except dry ginger[16] but if mixed with other things it is also good [17]

Praising his own country (China), he says that there are more than four hundred kinds of herbs, stalks and roots in China. Moreover, in the healing arts of acupuncutre and cautery and the skill of feeling the pulse China was never been superseded by any country of Jambūdvīpa but at the same time he laments at the affairs there as the tending and protection of the body and the inspection of the cause of disease (*Nidana*) is very much neglected Their habits of diet also are defective Nothing should be prescribed without examining the cause of the disease He despises onions[18] and also objects to the use of filthy substances such as urine and faeces as drugs.[19]

Al-Biruni

Al-Biruni was born in 973 A D in the territory of Khwarizm When in 1017 A D Sultan Mahmud of Ghazni (999–1030 A D) invaded and annexed the territory of Khwarizm, Al-Biruni was taken to Ghazni where he lived and died at the age of 75

(1048 A D) During his stay at Ghazni, he got opportunities of direct contact with Indian scholars and also acquired knowledge directly from Sanskrit texts. He might have paid visits to and lived in different parts of the Punjab, and the possibility of travels to other parts of India also can not be ruled out.[20]

Al-Biruni mentions about the temple of Sun at Multan which was described by Yuan Chwang. This was in flourishing condition when it was destroyed by Mahmud.[21]

In the context of medicial literature, he mentions about Caraka and his book (*Caraka-saṃhitā*) which was translated into Arabic for the princes of the house of Barmecides He also traced here the tradition of Āyurveda right from Brahmā.[22]

As mentioned earlier in the works of Bānabhaṭṭa, *Dhātuvāda* (alchemy) was rampant in the country A sort of mania for alchemy (*Dhatuvāda-Vāyu*) leading to making gold had developed in the learned and the common folk alike Al-Biruni has critised it bitterly He calls alchemy as witchcreft thriving on the ignorance of the people who are due to greediness are badly after gold-making. But, as he himself admits, he could not acquaint himself sufficiently with the methods and materials as it was concealed by the experts. He has again described about the science of *Rasāyana* which was similar to alchemy.

In this connection, he has mentioned the names of Nāgārjuna and Vyāḍi and some others who were adepts in this science and had acquired supernatural powers [23]

The above observation indicates three things —

1 As the science was quite reserved in a closed circle of experts who did not disclose the knowledge to everybody Al-Biruni could not get access to them and whatever he has written is based only on popular hearsay.

2 As a corollary to this, he could not observe the other aspect of the science known as '*Rasaśāstra*' under which processing of mercury and other metals and minerals were done for their use in benefit of mankind

3 Because of this, he was quite confounded and could not differentiate between *Rasāyana* and *Rasaśāstra* What he has described as *Rasāyana* similar to alchemy is, in fact, *Rasasastra*, Nājārjuna, Vyādi etc were expert founders of this branch

Al-Biruni mentions about the belief of the Hindus in charms and incantations He refers the work of Garuda[24] which treats these things Most of these charms were intended against snake-bite [25]

References and Notes

1. Beal Samuel. *Buddhist Records of the western world,* Int *Ch.* XXVII, p Lvii
   B S Upadhyaya *Guptakāla Kā Sānskrtika Itihāsa,* P 277
2 Watters Thomas: *On Yuan Chwang's Travels in India,* pp 154-155
   R.K. Mookerji: *Glimpses of Ancient India, Ch* XI, p 84
3. Watters Thomas. op cit p 159, S Beal. op. cit, II, p 86
4. Ibid. p 174
5. *CS.* Ci 3.
6. Watters Thomas. op cit p 254
7. I-Tsing *A record of the Buddhist Religion as Practised in India and the Malaya Archipelago (A.D. 671-695),* Munshiram Manoharlal, p 114 Delhi, 1966
8. Ibid, p 126-127
9. He does not name the sections but gives only the contents by which they are clearly identified. The eighth, however, is not clear. By description, it does not fit to Vājīkarana which particularly deals with aphrodisiacs It is probable that in Buddhist society of ascetics it was replaced by some other section as Nāgārjuna in his *Yogaśataka* has replaced it with *Pañcakarma* Probably I-Tsing might be meaning that which also helps strengthening the body
10. Ibid p 128 This observation is very significant. It points to the composition of the *Astāngahrdaya* which was completed before the arrival of I-Tsing and had become popular by that time Some take it as Suśruta (see ibid, additional notes, p 222) while others as *Yogaśataka* (see Filliozat *Classical Doctrines,* p 13) but the former is not a late compilation and the latter not so popular
11 Ibid. P 128-129
12. Ibid. P 129-130
13 Ibid p 130-134
14 KS Khila 17-38
15. Ibid p 134
16. He clearly refers to '*Vipāka*' Generally the pungent substances have *katu vipāka* except dry ginger (Śunthī) which has madhura one thus being moderate)
17. Ibid p, 135,
18. Ibid p 136-138
19 Ibid P 138-140 It indicates that by that time human urine was introduced in medicine In SS this might have got place nearabout or before the same period
20 Ahmed Qeyamuddin (ed) *India Al-Biruni,* National Book Trust, New Delhi, 1983, Int. VI-IX
21 Ibid pp 53-54
22. Ibid pp 75 Caraka is also quoted in connection with weights (p 77) The origin of disease and medicine is traced according to Caraka (p 177)
23 Ibid pp 91-93
24 '*Gāruda*' is mentioned by Bānabhatta too
25 Ibid p 93.

8

PHILOSOPHY OF MEDICINE

P.V. SHARMA

Science has its base in Philosophy. Philosophy projected outwards becomes Science and Science moving inwards finds its root in Philosophy. When human intellect goes upwards in search of spirit it reaches in the realm of Philosophy but when it goes downwards to explain the phenomena of material nature it ramifies into various branches of Science Living being or embodies life is a combined manifested form of spriit and nature and as such medicine which concern it becomes both Philosophy and Science. In fact, medicine makes a bridge between them where both interplay. Philosophy finds its meaningful practical application in Science while Science gets its firm foundation in Philosophy. That is why it is observed that in evolutionary stage, medicine developed at the hands of Philosophers not only in India but even in Greece the credit of founding the medical sciences goes to Philosophers like Socrates, Plato and Aristotle.

Medicine, being a secular science, is not attached to any dogma or sect but applies the different views of philosophy explaining the various phenomena of the mysterious human nature, Āyurveda, the medicine of India, being no exception. It would be interesting to study how Āyurveda seated in firm foundation of Philosophy applied its various aspects in elaboration and evolution of the Science of Medicine Hence Philosophy stays not a subject of mere speculation but plays active role to prove its meaningful practical utility in science.

Because of secularism, the medicine-man critically studies all the different views prevailing in Philosophy and utilises them, as necessary, without any prejudice But while doing this, he runs the great risk of opposition from the dogmatic sects and the society bound by it [1] He faces all this in the face of his great and high objects of the service to the living beings in order to ameliorate their sufferings

To eradicate the disease one has to find its root (original) and for that one would have to understand the origin of man because the same factors which produce man cause also his disorders.[2] Hence, at first, the evolution of the Universe, of which man is a tiny member, is to be considered

Right from the Vedic period, there was the view holding an eternal principle which pervades the cosmos and the individual being and is of the nature of existence, consciousness and bliss Thus though body is a phenomenal existence the spirit within it is eternal and puts on body after body When he enters into a body it is called birth and when he leaves it is death.

At the same time there were views quite contrary to it not accepting the existence of an eternal principle taking re-birth and as such contradicting the other invisible world (*Paraloka*) According to them, there were other factors responsible for creation Those accepting the existence of eternal soul, other world and the testimony of Vedas were called '*Astika*' (positivists) while the others rejecting the same were '*Nāstikas*'[3] (heretics or nihilists)

In *Śvetāśvatara Upaniṣad* (1 2), some of the heretic views are referred to These are the views accepting *Kāla*, *Svabhāva*, *Niyati*, *Yadṛcchā* and *Bhūta* According to Brahmajālasutta of Dighanikāya there were sixty two such views prevalent at the time when Buddha emerged. Jaina texts record threehundred and sixtyfour non-Jainic views. *Mahābhārata* (Śānti. 222, 224 etc.) also mentions about these Of these the propounders of six main heretical sects are mentioned as contemporary of Buddha. They are —

1. *Pūraṇa Kaśyapa*
2. *Ajita Keśakambalī*
3. *Prakuḍha Kātyāyana*
4. *Makkhali Gośāla*
5. *Sañjaya Vellathiputta* and
6. *Nighantha Nāthaputta.*

The last one is Mahāvīra, the 24th Tirthankara of the Jainas Makkhali Gośāla, was the propounder of the '*Ājivika*' sect which believed in *Niyati*[4] (determinism)

Medicine being a secular subject utilised all the views, irrespective of their affiliation to Vedic or non-Vedic traditions, in explaining the physio-pathology of the living body. In this respect, the position of medicine-men was quite unique As they took some of the diseases as the consequence of the deeds in past life and resort to *daivavyapāśraya* cikitsā (spiritual treatment) they believed in re-birth and the other world For that they accepted the eternal principle of consciousness as soul and by all arguments established its existence On the other hand, they also realised the importance of certain heretical views That is why in the context of the origin of man and his disease, Caraka accepts silently the other views while in that of the other world (Paraloka) he refuted the views of heretics and established the true position of the principle of consciousness [5]

The chapter on the origin of man and his disease (*CS SU* 25) presents a faithful record of then current heretical views and the attitude of medicine-men towards them. This chpater is in the style of symposium where after one speaker presented his proposition the other man refuted his view with arguments and finally proposes his own view In this way, the following factors are propounded as primary cause of man and his disease —

1 *Ātman* (Soul)
2 *Sattva* (Mind)
3 *Rasa* (Nutrition)

4 *Saddhātu* (combination of six principles)
5. *Mātā-Pitā* (parents-genes)
6. *Karma* (deeds)
7. *Svabhāva* (Nature)
8. *Prajāpati* (Lord of creation)
9. *Kāla* (Time)

Concluding the discussion, Punarvasu observed that we should consider on this without any bias and search for the truth. In fact, the enttities excellence of which produce man also cause disease in disturbed state.[6] This remark as well as non-refutation of the above views show that Punarvasu visualised some truth in all these views and thus synthesised them together.

In another context (*SU.* 11), Caraka refers to the views holding Parents, *Svabhāva,* Creator and *Yadṛcchā* and refutes all of them proving the existence of *Ātman* and *Paraloka.* Āyurveda makes a balance between *daiva* (past deeds) and *puruṣakāra*[7] (human efforts). Diseases also have been grouped as *dosaja* and *karmaja* and their treatment prescribed accordingly.[8] This could not have been established until unless eternity of soul and re-birth was proved.

Suśruta also says that '*Pṛthudarśi*' sages (of Āyurveda) take *Svabhāva, Īśvara, Kāla, Yadṛcchā, Niyati, Pariṇāma* as *Prakṛti*[9] (source of origin). The word '*Pṛthudarsin*' on one hand, means 'having gross vision' and on the other hand, 'with wide vision'. The former sense relates to heretics while the latter one to medical seers who utilised them in unbiased way with broader outlook Ḍalhaṇa says that as this Science is universal, all the views are accepted here.[10] Further, citing illustrations, he shows how all these have been used in different contexts

Caraka adopts a rational attitude in this respect and instead of believing blindly in any dogma or sect, he prefers to examine all the views and accepts whichever is useful that is why he always insisted on '*Parīkṣā*'[11], even *Pramāṇas* are termed by him as '*Parīkṣā*'.[12] The theory of causation so throughly propounded by him is another evidence of his method.[13]

The theory of causation propounded by Caraka is based on sound footing. He explains the circuits of cause and effect with the example of seed and fruit which can be inferred from each other (*CS. SU* 11.31) The casual relation is known from *Anvayavyatireka* (Law of agreement in presence and absence) Such relation of *Vīrya* with action is established on this basis (*CS SU* 26.65) There is also Law of concomitant variation by which effect comes as similar to the cause. No plant can be grown by other seed (CS SU 11 32).

Apart from Perception, Inference and Authority, Caraka accepts *Yukti* as the fourth *Pramāṇa* (*Pramāṇais caturbhih*) He defines *Yukti* as 'means of knowledge

about the things produced by plurality of causes which is effective in all three times (*trikāla*) and subserves the purpose of *trivarga (Dharma, Artha* and *Kāma*)'. Its several examples have been given (*CS. SU.* 11.23-24). Cakrapāṇi interprets it simply as conjecture and not itself a *Pramāṇa* but assisting a *Pramāṇa*. He also does not see any difference from *Anumāna* when assemblage of causes points to future (sometimes neglecting the present). Its access to three times, according to him, is due to its connection with the materials for inference which is *trikāla* in nature. This is an attempt to undermine its importance due to misunderstanding its real nature. Both *Anumāna* and *Yukti* are *trikāla* and are quite independent of each other. Their access to *trikāla* is because of their having been established on cause-effect relationship. *Anumāna* operates with single cause while *Yukti* deals with plurality of causes. Moreover, *Anumāna* itself is dependent on *Yukti*. As Caraka says *tarka* (argument) supported by *Yukti* reaches the level of *Anumāna* (*CS.* Vi. 8.40). Thus *Yukti* seems to involve the relation of *avinābhāva* which leads to the concept of *vyāpti* (invariable concomittance).

Cakrapānidatta here also quotes the view of *Śāntarakṣita* annotated by Kamalaśīla who have refuted the Caraka's view on *Yukti* They say that in *Yukti* there is no distinction between *Sādhya* and *Sādhana* and, in fact, it is not different from *Anumāna*. But this analysis of *Yukti* is also not correct because there is clear demarcation of cause and effect; the proper assemblage of producing factors is the cause and the product is the effect As in the instance of the proper assemblage of water, ploughing etc. giving rise to crop the former is cause and the latter the effect

'*Yoga*' here means right combination and not simply assemblage because irrigation, ploughing etc. done rightly and at right time alone can produce effect. Similarly the right combination of the four limbs (*catuspāda*) of treatment leading to alleviation of disorder is termed as *Yukti* *Yukti* is very important in medicine as it is a team work and therapeutics itself is a complex phenomenon comprising of several factors If there be right combination of these factors on rational basis, the effect can be predicted and and vice-versa It is not clear how B N Seal says that in case of plurality of causes the effect can be inferred from cause but not vice-versa (p 285) but in that case how can it be *trikāla*?

The five terms of syllogism-*pratijña, hetu, dṛṣṭānta, upanaya* and *nigamana* are also explained on which the *Pañcāvayava Vākya* of *Nyāya* stands

No doubt, Caraka has accepted Veda as '*Aptāgama*' (authoritative scriputre) but at the same time he also places in the same category other secular sciences which do not go against the objects of Veda, are established by critical thinkers, approved by scholars and are aimed at welfare of the universe [14] This also shows his synthetic and unbiased attitude which holds both Vedic and Non-Vedic views together including Buddhist and Jaina ideas Pāṇini (4 4 60), probably has hinted towards this by putting '*Dista*' in between '*Asti*' and '*Nāsti*'[15] The latter two are extreme poles while the former (*Diṣta*) balances the two The '*Daistika*' choses one of the two after critically examining the facts and circumstances [16] Thus Caraka, in this sense, was '*Daistika*' who accepted both '*Āstika*' and '*Nāstika*' views as logic permitted

The word '*Caraka*' often comes with '*Parivrājaka*', '*Nirgrantha*' etc.[17] Which indicates that Caraka also was a sect of Philosophers like the latter ones. Probably Carakas were moving physicians having their own philosophy which the object of welfare of living being deviating, of course, from the traditional track. Pāṇini (5.1.11) mentions Māṇava and Caraka together which denote probably two sects of medicants, the former engaged in mesmerism, exorcism etc. and the later in medical relief. Both are not looked upon well in the society the former[18] perhaps due to their secret performances[19] and the latter because of their peculiar philosophy adopting even the heretic views.

As regards the traditional systems of Philosophy, *Sāṃkhya* is the oldest one which was somewhat modified later as found in the *Sāṃkhyakārikā* of Īśwarakṛṣṇa. Caraka used the earlier *Sāṃkhya* (*Ādya Sāṃkhya*)[20] in which both *Purusa* and *Prakṛti* were denoted by *Avyakta*[21] while Suśruta describes the same with Puruṣa as the twentyfifth principle.[22] Caraka based the *Sāṃkhya* Philosophy as the base for the concept of health and disease. Health, according to him, is *Prakṛti* (equilibrium of *dhātus*) whereas disease is *vikṛti*[23] (disequilibrium). As the creation emerges from *Prakṛti* and is dissolved in the same, disease has its origin from health and treatment is aimed at reverting it back to the original source. The concept of *Karmapuruṣa*[24] (*Ṣaḍdhātvātmaka*) has elements of both *Puruṣa* and *Prakṛti* the latter presented by five *Mahābhūtas*. This is a concept evolved by Āyurvedic seers for practical purposes according to earlier *Sāṃkhya*[25] because Āyurveda is based on the concept of *Pañcamahābhūta* while other things have not much relevance[26] though '*Rāśipuruṣa*' is described formally as in *Sāṃkhya* [27] Dasgupta's remark that (according to Caraka) the self is in itself without consciousness and consciousness can only come to it through its connection with the sense-organs and *manas*[28] is curious Caraka clearly states that *Atman* is '*jña*' (possessing consciousness) and consciousness manifests by its contact with the instruments[29] (*indriyas*) Similarly, to say that Caraka identifies the *avyakta* part of *Prkṛti* with *Puruṣa*[30] does not also seem to be accurate There can't be made any division like *avyakta* and vyakta (or *prakṛti* and *vikrti*) parts of *Prakṛti*. The only thing that can be said is that as both *Purusa* and Prakṛti are '*Avyakta*' (unmanifest) both may be denoted by that Dasgupta could not trace the source of passages in *Mahābhāṣya* (4.1 3) enumerating the reasons which frustrate visual perception In fact, it was the *Carakasamhitā*[31] from which *Mahabhāsya* had taken and later was borrowed by Iśvarakrṣna

In Āyurveda, the *Indriyas* (senses) are *bhautika* and so are their objects[32] though *Sāmkhya* recognises them as originated from *Ahaṅkāra* In the latter case, the specificity of the senses would be difficult to prove Thus in this respect, Āyurveda comes closer to *Nyāya* system [33]

Āyus (life), according to Āyurveda, is conjunction of body, mind and soul (CS. SU. 1 42) while *Prāna* is the principle which maintains the functions of life (CS Sa. 1.77), thus *Prāṇa* is a means of life. *Sāṃkhya* while refuting the views of Cārvākas, who hold that *Prāṇa* emerges from inanimate matter like intoxicating power in liquor, says that *Prāṇa* is a resultant of the various concurrent activites of the *Antaḥkaraṇa* and thus overlooks the role of the body (*bāhya karaṇa*). Āyurveda includes *tridosa*

also among *Prāṇas* which chiefly regulate and control the biological functions. Suśruta accepts twelve *Prāṇas* — three physical *doṣas,* three psychic qualities, five *indriyas* and soul (*SS. Sa.* 4.3) Caraka does not enumerate Prāṇas in this way but hints at them in the definition of *Āyus* as *tridoṣa* and *triguṇa* are only manifestations of body and mind respectively. *Prāṇa* emerges simultaneously with life to take up the biological functions that is why it is called *'Jyeṣtha'* (foremost). As *Vāyu* is external manifestation of *Prāṇa,* it is also called secondarily as *Prāṇa. Vedānta* says it as *Adhyātma Vāyu.* B.N. Seal has bracketed *Prāṇa* with life but, in fact, life is *Āyus* while *Prāṇa* is its means. In this respect too, Āyurveda differs from *Sāṃkhya.* The other difference of Āyurveda from the *Sāṃkhya* system is that the latter accepts *Puruṣa* as *'Sarvagata'* (all-pervasive) while in the former they are accepted as *'Asarvagata'* (non-pervasive) though both recognise them as eternal [34]

Like Sāṃkhya, Caraka also prepounds the earlier *Yoga.* It is said that in *Yoga* and *Mokṣa* all sensations cease, the latter being perfection while the former is the path leading to it.[35] *Yoga,* in Āyurveda, denotes, apart from mental calmness and steadiness, 'application' in general and 'balanced application' in particular which is actual Yoga leading to happiness but is quite rare.[35a] The eight accomplishments (*Siddhi*) as given in *CS* are also different from those in Patañjali's *Yogasūtra.*[35b]

As medicine is concerned with investigation of causes (*hetu*), effects (*liṅga*) and remedies (*auṣadha*) which are again the cause of the alleviation of effects, it naturally has to pave the way for *Parīkṣā* and to define the *Pramānas,* the means for investigation and right knowledge. Definition of *Pramānas* as given in *CS* presents the earlier form which contributed in shaping the *Nyāyasūtra* by Aksapāda later on [36] The description of *Yukti* alongwith *Pratyakṣa, Anumāna* and *Āptopadeśa* is the original contribution of Caraka [37] Yukti is the rational combination of various essential factors so as to produce the result in a right way As this is based on cause-effect relationship and established with invariable con-comittance it is *'trikāla'* e.g. it acts in relation to all the three times, present, past and future Besides, other minor means of knowledge such as *Upamāna, Arthāpathi* etc [38] which are recognised as independent *Pramānas* elsewhere are described and utlised in explaining the phenomena Dialectical terms (*Vādāmārga-pada*) are also defined and described which are again used in *Nyāyasūtras.*[39]

Vaiśesika comes in for description of six *Padārthas* (categories) e g *Dravya, Guna, Karma, Sāmānya, Viśesa* and *Samavāya.* Of these, *Sāmānya* and *Viśesa* are more significant and as such have been given the first place Here also Āyurveda differs from *Vaiśeṣika* in the sense that the latter uses *Sāmānya* and *Viśeṣa* for class (*Jāti*) and individual (*Vyakti*) respectively but in the fomer they denote similarity (*tulyārthatā*) and dis-similarity[40] (*viparyaya*) which cause increase and decrease in body-elements [41] Thus in medicine they are in concrete sense while in *vaiśesika* they are quite abstract ones *Dravya,* possessing *Guṇas* (properties) and *Karma*[42] (action) is also a concrete thing which, if used as diet or drug, produces similar properties in and exerts actions on the body As both *Dravya* and *Deha* are composed of five *Mahābhūtas,* the ideas relating to Physiology, Pathology and Pharmacology are based on the concept of *Pañcamahābhūtas* which are dealt with in great details [43]

Thus all concepts in Āyurveda revolve around the *Pañcamahābhūtas*. The three *dosas* — *Vāta, Pitta* and *Kapha* — are composed of them The six Rasas are formed by different combinations of *Mahābhūtas* *Vipāka* of ingested substances is also decided by permutation and combination of *Mahābhūtas* consequent upon digestive process. *Prabhāva* solely depends on the specific *bhautika* composition of drugs

Mahābhūtas are five — *Ākāśa, Vāyu, Agni, Ap* and *Prthivī* Sound, touch, vision, taste and smell are their specific properties respectively.[44] The *Bhūtas* have three stages of existence — *Bhūta, Mahābhūta* and *Dṛśyabhūta.*[45] *Bhūta* is the eternal atomic stage When they attain to *trasarenu* state they acquire *Mahattva* (grossness) and as such are called *Mahābhūtas*. In this state, the *Bhūtas* are included, by the process of combination known as '*Upaṣṭambha'*, successively in the later *Bhutas*. Accordingly *Ākāśsa Mahābhūta* is single but the *Vāyu Mahābhūta* consists, apart from *Vāyu, Ākāśa Bhūta* eoo; *Agni Mahābhūta* consists of the former two also; In *Ap Mahābhūta,* the former three are also involved and *Prthivī Mahābhūta* includes all the former four Thus *Ākāśa Mahābhūta* has only one property e.g. sound while *Vāyu Mahābhūta* has two e g. sound and touch, in *Agni Mahābhūta,* there are three properties e.g sound, touch and vision, in Ap Mahābhūta there are four-sound, touch, vision and taste and *Prthivi Mahābhūta* has all the five properties e.g sound, touch, vision, taste and smell [46] This process of involvement of *Bhūtas* in the successive *Bhūtas* is known as *anupraveśa*[47] (successive involvement)

In the third stage, all the *Mahābhūtas* combine together to form the gross substances of the universe. They are called *Dṛśya Bhūta* Accordingly each and every substance is *Pāñcabhautika* (composed of five *Mahābhūtas*), but the substances differ only in the proportion of *Mahābhūtas* in their composition and they are known from the preponderance of a particular *Mahābhūta* composing them For instance, when a substance is called *pārthiva* it means that, though it is composed of five *Mahābhūtas,* the *Pṛthivī Mahābhūta* is predominant there [48] Similarly, *āpya, āgneya, vāyavya* and *ākāśīya* denote the same position

This process of '*Pañcīkarana*' is based on the idea that the preponderant *Mahābhūta* gets 50% share in the composition while the remaining four are in proportion of 12½% each [49]

The classification of medicinal substances according to preponderance of *Mahābhūtas*[50] in them is significant not only on account of their physico-chemical properties but also because of their pharmacological action mostly determined by that

Such concept of *pāñcabhautika* composition of body and substances is found neither in *Vaiśeṣika* nor in *Nyāya,* though the latter accepts the material nature of *Indriyas,* body, according to it, is *pārthiva* and not *pāñcabhautika* This is because of its technical attitude that only one *Mahābhūta* may be the material cause of the substance though other *Bhūtas* may participate in its composition as efficient cause [51] In this respect, Āyurveda is nearer to *Vedanta* according to which the five *Bhūtas* freely combine in different proportions and groupings to produce various substances in the world

As the whole foundation of medical school is based on the *Vaiśeṣika Sūtras*, Dasgupta says — 'it seems to be certain that these Sūtras were written before Caraka'[52], but, as in case of Nyāya, *CS* is probably fore-runner of the *Vaiśeṣika Sūtras* too.

While discussing the role of medicine in alleviation of disorders, Caraka has presented an interesting dialogue between Ātreya and Maitrya. The latter seems to be believer in fate and determinism and says that some patients on treatment by expert physicians and with effective drugs are cured while others with the same management die. On the other hand, it is observed that in some cases cure is effected without proper treatment while in the same circumstances others die. Thus it is evident that medicine has no role in cure or otherswise of diseases and as such is useless.

Ātreya refuted this view and observed that though all diseases are not liable to cure, those which are curable can't be done so without treatment. The patients who recover without any treatment do so with their natural immunity and as such do not require any medication. In fact, the role of medicine is simply to assist the nature which is already at work instinctively for recovery. For example, if a man slips down on the road, he may by himself stand up with some difficulty and time but if somebody assists him this process may be quicker and with less trouble. Thus medicine has its positive role to play in treatment of diseases.[53]

The important role of nature is also discussed under the topic of *Svabhāvoparama* (natural cessation). According to this, the disturbed body elements are, by natural process, automatically destroyed and eliminated. Secondly, such elements can not be restored to their normal state. What physician, in such cases, does is to initiate the process of equilibrium in body elements which after the disturbed elements are eliminated, brings recovery to the patient.[54]

All this shows strong confidence of ancient physicians in potentiality of *Svabhāva* (nature) of man

With regard to the role of *Karma* (past deed), Āyurveda's stand is that if *Karma* is strong and dominant it certainly exerts its action and brings forth its result (death) in determined time (*Kālaniyata*) while in other case where it is weak it does not exert and show its result in time (*Akālaniyata*[55]) Only in the latter case drugs effect cure by subdueing the weak Karma Moreover, *Adṛsta* (invisible *Karma*) may be resorted to where visible factors do not seem to operate [56] Hence in practice of medicine where etiological factors are quilte evident in causing a disease, there is no ground for unnecessarily dragging the the unseen *Karma* Suśruta, accordingly, has established the origin of epilepsy from *doṣas* refuting the causation of extraneous factors (*SS. U.* 61.17-21).

Āyurveda maintains balance between *Daiva* (fate) and *Puruṣakāra* (effort) which decide the life-span of man. Besides, it can't be said that life-span is determined. In practice, however, it is observed that poeple use measures to prolong life-span and

avoid the factors affecting it. This could not be justified if life-span were determined. Life, in fact, depends on wholesome management otherwise man dies. Thus determinism is contradicted.[57]

Likewise, the question of timely or untimely death (*Kāla* or *Akāla Mrtyu*) is also discussed. It is concluded that timely death does not involve any determinism but only means that end of the body in normal course by the natural process of decay at the usual period of the age whereas premature end due to disese, accident etc. means untimely death.[58]

Thus it may be concluded that the ancient seers of medicine utilised the different philosophical ideas and propounded new ones to achieve their own objectives. Thus the philosophy of Āyurveda has its own originality in comparison to other traditional systems of philosophy and as such also contributed to the latter's developmet. The most striking point is that medicine being secular was never attached to any dogma but utilised all the views, Vedic and non-Vedic, in its own interest in unbiased way in spite of social resistance and thus paved the way for their synthesis Unfortunately the medical philosophy of the ancients did not receive due attention of scholars so much so that Mādhava in his *Sarvadarśana-saṅgraha* described *Raseśvaradarśana* but could not deal with the *Āyurveda-darśana*.

References and Notes

1. Caraka had to undergo this situation with the result that it did not find place in *Nāvanītaka* and had to wait till Vāgbhata who explicitly mentioned him as the author of the *Carakasaṃhitā*
2. *CS. SU.* 25
3. Kāśikā 4 4.60
4. Upadhyaya Baladeva *Bauddha-Darśana-Mīmānsā*, pp 20-30. S N Dasgupta: *HIP*, II. pp 512-550, I. 78-80
5. *CS SU.* 11
6. *CS. SU.* 25 28-29.
7. *CS* Vi 3.29-30, Sa. 1 116-117
8. *AH SU.* 12 57-59, also SS U 40 163-165 Tīsatācārya gives a long list of diseases caused by past deeds (*Cikitsākalikā* 10-12)
9. *SS Sa* 1 11
   In a verse of *CS* (Sa 1.115) the role of *Kāla*, *Pariṇāma* and *Svabhāva* are mentioned Caraka does not touch the doctrine of *Niyati* (determinism) of the *Ājivikas*.
10. *Etat sarvam atrānumatam sarvavedapārisadatvād Āyurvedasya* — Dalhana on above.
11. *CS SU* 10 21, 11 26.
12. Ibid *SU* 11 17, Vi 4 5, 8 83
13. Ibid *SU.* 11 31-32
14. Ibid *SU* 11 27 (*Yasi ānyo'pi kascid vedārthād aviparītah parīksakaih pranītah śistanumato lokānugrahapravrttah sāstravādah sa cāptāgamah*)
15. *Asti nāsti distam matih.*

16 *Pramānānupātını yasya matıh sa daıstıkah-Kāśıkā* '*Dısta*' *ıs* later on wrongly ınterpreted as '*daiva*' (fate) and became ıts synonym See *Tattvabodhını* on the above sūtra; *Amara* 1.4 28; V S Agrawal. *Pānınıkālına Bhāratvarṣa*, p 378
17 *Lalıtavıstara*, 1, p 2, *Saddharmapundarīka*, 13, p 166
18. '*Manoḥ kutsıtam apatyaṃ mānavaḥ*' — *Tattvabodhinī* on 5 1 11
19. See *Mānavavıdyā* ın *Arthaśāstra*.
V S. Agrawal takes both Mānava and Caraka as types of students and also '*Daṇḍamānava*' and 'Maṇava' as one (op. cıt. 272, 296) but, to me, they appear as sects of medıcant as also ındıcated ın 6 269 The prefix '*Danda*' has been used probably to dıstınguısh ıt from Māṇava and so ıs suffıx '*ka*' ın '*Mānavaka*'.
20. *CS. SU.* 25.15.
21. Ibid. Sa 1 61.
22 *SS* Sa. 1.8 (*Purusah Pañcavıṃśatıtamah*)
23. *CS. SU.* 9 4.
24. *CS. Sa.* 1.16, *SS. SU.* 1.22, Sa 1 16
25. *CS. SU.* 25.15
26. *SS. Sa.* 1.13 (*Bhūtebhyo hı param yasmān nāstı cıntā cıkıtsıte*).
27. *CS. Sa* 1.35.
28. Dasgupta· *HIP*, I 214,216 He ıs perhaps mısled by Cakra's *Comm* (on *CS. SU.* 1 48) as '*Na Kevalasyātmanaścetanatvam*'.
29. CS Sa. 1.54, 75
30. Dasgupta op cıt
31. *CS SU.* 11 8
32. *SS. Sa* 14, *CS SU 8.9*, 11, 14
33. Dasgupta op cıt p. 219
Ghanekar B.G : Comm on SS Sa 1 14-15.
34 SS Sa 1 16 Also Dalhana's *Comm* on the same
35. Ibıd. *Sa.* 1 137
35a Ibıd *SU* 1 123, Sa 1 129
35b. Ibıd Sa 1 140-141.
36 Dasgupta op. cıt p 302, II, 398-400, 402
37 *CS. SU.* 11 17, 23-25
38 *CS.* Vı 8, 41, 42, 48,49
39 Ibıd II, p 371
40 *CS SU.* 1 45
41 *CS. SU* 1 44
42 Ibıd *SU.* 1 51
43 *CS. SU.* 26, *SS SU* 40, 41
44 *CS. Sa.* 1 27
45 Dāsa Upendranātha: *Pañcabhūtavıjñana*, ch 3, p 69 87
46 *Praśastapādabhāsya, sṛstısamhāraprakarana*
47 *SS Sa* 1 21
48 Ibıd *SS SU* 41 3
49. Ghanekar B G *Comm on SS* Sa 1 22 Also B N Seal, *Posıtıve Background of the Ancıent Hındus*, p 91-92
50. *CS. SU* 26 10-11

51. *Nyāyasūtra,* 3 1 27
52. Dasgupta. op cit., p. 280
53. *CS. SU. 10.* 4-5
54. Ibid. *SU.* 16.27-36.
55. Ibid. Vi. 3 36.
56. Cakra's *comm.* (on *CS. SU* 10.5, Vi. 3 36).
57. *CS.* Vi. 3.28-36.
58. *CS.* Vi. 3.38.

9. MEDICAL LITERATURE/AUTHORS

9.1

THE GREAT TRIO (BṚHAT-TRAYĪ)

Caraka, Suśruta and Vāgbhata are commonly known as the great trio (Brhat-Trayī or Vṛddha-Trayī) of Āyurvedic literature Their greatness is on account of their antecedence as well as comprehensiveness. In fact, in this definition only the Caraka-saṃhitā and the Suśruta-samhitā come which are representative precursors of the two schools — Medical and Surgical — and were followed by the later works The Saṃhitā of Vāgbhaṭa being a compliation or bridging agent could also find a place in the Trio. The Caraka-saṃhitā and the Suśruta-saṃhitā represent the ancient period when voluminous texts were composed on different specialities, while the Astāñga hrdaya of Vāgbhata represents the age when a short treatise containing practical information about all the specialitiesd was required so as to serve as a handbook for the general physicians practising in the public or working in Hospitals and dispensaries They are put in the same order as followed by Hārīta e.g Caraka, Suśruta and Vāgbhata He places Atri in Krtayuga, Suśruta in Dvāpara and Vāgbhaṭa in Kali (Pariśistādhyāya 7-8) (ed).



Suśruta
(Courtesy Department of Śalya-Śālakya, BHU)



Caraka
(Courtesy Bharat Kala Bhavan, BHU)

9.1.1.

CARAKA

P.V. SHARMA

The Caraka-saṃhitā

The *Caraka-saṃhıtā,* as available in ıts present form, ıs originally the work of Agniveśa who composed his *tantra* by collecting the teachings of his teacher Punarvasu Ātreya. This *tantra,* presumably small in size and content, was later improved and enlarged by Caraka on whose name it came to be known popularly as the *Caraka-saṃhitā.* After a lapse of tıme, some of its portions were lost which were reconstituted and restored by Dṛḍhabala. Thus the present *Caraka-saṃhitā* is originally authored by Agniveśa (on the basis of Ātreya's teachıngs), enlarged by Caraka and redacted by Dṛḍhabala Hence the hıstorical study of Caraka necessiates the consıderatıons on hıs predecessors (Ātreya-Agnivesa) and the follower (Dṛḍhabala.) Thıs would be lıke analysıng the three distinct layers of an excavated structure without whıch no study on this topıc can be deemed as complete

Ātreya

Here the world 'Ātreya' does not mean a clan (*gotra*) but 'Atri's son' as ıs evident from a large number of such statements.[1] The name of the person was Punarvasu[2] (on the basıs of constellatıon) and Krsna[3] for popular usage. In those days, ıt was customary to gıve two names — one on constellatıon and the other for popular use[4] There are many formulatıons ascribed to Krsnātreya[5] Commentıng on the Nāgarādya Cūrna (CS Cı 15 129-131) Cakrapānıdatta says that elders take Punarvasu and Krsnatreya as one[6] Thıs ıs supported by Śrīkaṇṭhadatta[7] and Śıvadāsa[7a] However, it seems that like Agnıveśatantra, some text authored by Krsnātreya was also there whıch ıs quoted off and on[8] It contaıned chapters on *dravyaguna* and *parıbhāsā* too[8a] Caraka seems sometımes to be followıng hıs views, but sometımes goıng agaınst hım[9] Thıs raıses doubt about the ıdentıty of Punarvasu and Krsnātreya Thıs is further confirmed by the fact that there ıs only one reference of Krsnātreya and that too from the concludıng verses whıch mıght have been ınterpolated later on[10] There ıs also one Krsnātreya quoted ın the context of Śālākya[11] Defınıtely he ıs dıfferent from the former

It ıs saıd that Candrabhāgā was the mother of Punarvasu On the basıs of the words 'Cāndrabhāgı' and 'Cāndrabhāga[12], but ıt would be better to ınterpret ıt as 'the son of Candrabhāga' meanıng Artı's son It has to be noted that Atrı was also the father of Candra (*MBH. Drona,* 144 4, Śāntı, 208 9) Thus 'Cāndrabhāga' would mean' that whose fractıon ıs Candra (*Candrah bhāgo aṃśo yasya sah*) and ın thıs way ıt ıs an epıthet of Atri Moreover, the name or clan of sages ıs based generally on paternal or not on maternal sıde Fınally, the name of Atrı's wıfe ıs Anasūyā (see *Rāmāyaṇa,*

II,117.7 etc.) and not Candrabhāgā which is only a river of Pañcanada (MBH. Sabhā 9.19, Anu. 25 7). Bhardvāja is said to be the teacher of Ātreya on the basis of the introduction of the *Caraka-saṃhitā* (*SU. 1 26-27*) According to this, the eternal tradition of Āyurveda emerged from Brahmā, the creator and was received by Dakṣa Prajāpati. Dakṣa transmitted it to Aśvins who, in turn taught it to Indra, Bharadvāja, as the representative of the sages, approache Indra and received the science of life which he delivered to the sages as it was and by which he himself became longlived. Here the word '*Ṛṣayaḥ* (sages) includes 'Ātreya' though it is not mentioned explicitly[13].

In the other context (*Ci.*1.4, 3-5), the team of sages which approached Indra does not include the name of Bhardvāja but has conspricuously that of Atri, the father of Ātreya, along with Bhrgu, Aṅgiras and Vasiṣṭha etc. this is corroborated by the related statement in the *Kaśyapa-saṃhitā* (p.61) which says that Indra delivered Āyurveda to four sages-Kaśyapa, Vasiṣṭha, Atri and Bhṛgu[14] who taught it to their sons and pupils. This makes it clear that Atri and not Bhardvāja[15] was the teacher of his son Punarvasu Ātreya. The statement documented in the mid-body of the text and corroborated by other texts is more reliable than the introductory verses which might be later addition.



Atreya with his six disciples
(Courtesy Indian Institute of History of Medicine, Hyderabad)

Punarvasu again taught Āyurveda to his six disciples-Agniveśa, Bhela, Jatūkarṇa, Parāśara, Hārīta and Kṣārapāni of whom Agniveśa composed his text first which was followed by others[16].

There is one *Bhikṣu* Ātreya who seems to be some scholar ascetic coming from the Ātreya clan. He is the last speaker in the symposium on the origin of *Puruṣa* advocating Kālavāda and refuting the Svabhāvavāda put forth by Kāṅkāyana[17]. He is also seen in the inaugural assembly of sages alongwith Ātreya which distinguishes the two. Punarvasu is mentioned as '*brahmarṣi*' (sage among brāhmaṇas) following the Vedic tradition[18] whereas *Bhikṣu* Ātreya seems to belong to some non-Vedic tradition holding a protestant view[19]

There is yet another Ātreya, the great teacher (*diśāpramukha ācārya*) at Takṣaśilā who taught Jīvaka the illustrious physician and surgeon at the Buddha's time. Many scholars including Hoernle identify this with Punarvasu but it can not be accepted due to the following reasons:

1. The surname 'Ātreya' also goes to scholars other than Punarvasu such as Bhikṣu Ātreya.

2. The name of the Jīvaka's teacher given in Chinese transcription in the sūtra on the avadāna of Āmrapālī is 'Piṅgala' and not 'Punarvasu' In some transcriptions there is no particular name

3. In the *Caraka-saṃhitā*, there is no mention of Taksaśilā as residence of Ātreya Punarvasu, rather he is seen teaching at Kāmpilya in the Pāñcālas.

4. Ātreya Punarvasu was an exponent of *Kāyacikitsā*[20] and not of Surgery but Jīvaka's teacher seemed to be a good surgeon also[21]

Mukhopadhyaya identified this Ātreya with *Bhiksu* Ātreya whom he also attributes the authorship of *Atri-samhitā*[22]

Agniveśa

Agniveśa was the foremost among the six disciples of Punarvasu Ātreya He composed the Agniveśa-tantra collecting and arranging the talks, lectures and deliberations (in symposia) of his teacher This treatise possibly was small in size dealing the topics briefly (in the form of sūtras) which was later enlarged by Caraka with his annotations and explanations (Bhāsya or Vyākarana) and came to be known as the Caraka-samhitā Agniveśatantra was extant for quite long time (at least upto 15th century A D) which is evident from its quotations in the comms of Dalhana, Śrīkantha and Śivadāsa[23] but it is difficult to say that it is the same work A text, Āñjananidāna is also ascribed to Agniveśa which also seems to be later work of a different author.

Date of Ātreya-Agniveśa:

Atreya is read in *Aśvādi* (4 1 110) and Agniveśa with Parāśara and Jatūkarṇa in Gargādi gaṇa (4 1.105) of Pāṇini's *Aṣṭādhyāyī*. *As the* date of Pāṇini is fixed as 7th cent. B.C.[24] It shows that Ātreya-Agniveśa were quite renowned during that period Ātreya Punarvasu's teachings represent the highest stratum of material in *CS*. Which belong to the Upaniṣadic period[25] It is said that Āyurveda is more attached to the *Atharvaveda*[26] which indicates pre-existence of the latter Thus Ātreya's date may be fixed between the Atharvaveda (1500 B.C) and Pāṇini (7th cent. B.C) e.g 1000 B.C in the age of *Upaniṣads*.

Caraka

The second and the prominent stratum in the *Caraka-saṃhitā* is that of Caraka on whose name the compendium is known He came after Agniveśa in the period when Buddhism was prevalent side by side with the Brāhmanic culture in which worship of different deities like Śiva, Viṣṇu and Kārtikeya was in vogue [27] Caraka has also prescribed oblations to Dhanwantari[28] who emerged as medicine-god in Purānas[29] and was worshipped as god at that time.

Who was Caraka? In Vedic times, a branch of *Kṛṣṇa Yajurveda* was known as Caraka. Carakas were disciples of Vaiśampāyana who himself was known as Caraka[30]. The *Sūtras* of Pāṇini referring to Caraka[31] allude to the same sect. Caraka might be one of the followers of this sect.[32] The branch known as '*Vaidyacārana*' of the *Atharvaveda* might be intimately related with medicine and 'Caraka' might be one of the physician belonging to that sect who roamed from place to place offering medical services to the people[33]. Aśvins also roved among them and treated them[34] Thus, by association, the roving (*Caraṇa*) combined in itself the meaning of 'Medical service' and as such the word 'Caraka' denoted 'the roving physicians' It seems that even the people belonging to the Caraka sect of the black *Yajurveda* were somehow or other related with medicine[35]. Perhaps that is why they were despised by Taittiriyas and the supporters of white *Yajurveda*[36]. The latter have also made '*Carakācārya*' (Head of the Carakas) as one of the Victims of *Puruṣamedha*[37].

Gradually, 'Caraka' was established as sect comprising of wandering mendicants who practised medicine and which is mentioned alongwith *'śramana' (monks)*, *tīrthika* and *'Parivrājaka'*[38] (roaming ascetics). They also adopted *yoga and tantric* practices along with medicine[39], the Carakas seen to be closer to Ājivikas maintaining, of course, their separate identity, the ascetic Vesiyayana (Vaiśampāyana = Caraka) and the six diśācaras (Caraka?) who met *Makhhali gosala*, the leader of the Ajivika sect, seem to be no other than Carakas (see Basham. *History and Doctrines of the Ajīvika*, p.49-50, 56-57). But at the same time, the sect was looked down upon by the dominant society because of harbouring non-orthodox views like those of tīrthikas, parivrājaka[39a] etc. and as such the word 'Caraka' also came to be used for the inferior type of people[40], commonly in the sense of messenger[41] or ranger[42] Thus it can be presumed that 'Caraka' was a scholar belonging to the Caraka sect which dominantly possessed the *Agniveśatantra* after it was enlarged and improved upon and made it as

its representative compendium naming as the *Caraka-samhitā* Thus the earlier tradition of Ātreya-Agniveśa was overpowered by Caraka which began to represent the medical school parallel to Susrurta who represented the surgical school The complete change in the name of the text can not be explained otherwise as it did not happen in any other case like Susruta, Kasyapa etc

C Kunhan Raja says that the word 'Caraka' does not seem to be Sanskrit, it may be the Pahlavi word '*Carek*'.[43]

Sylvan Levi, on the basis of the Chinese translation of a Buddhist text (*Saṃyuktaratnapitakasūtra*), has established that Caraka was attached as doctor to the king Kaniṣka[44]. Even if accepted, it is difficult to prove that he was the same Caraka who enlarged the *Agniveśatantra.* But it certainly indicates that by that time the name 'Caraka' for a physician became quite famous and there may be many persons holding that name, one being the doctor of Kaniska.

According to a current tradition, Caraka is identified with Patañjali probably on two reasons — one, both are regarded as incarnation of *śeṣanāga*[45] and the other, both are concerned with purification of body, speech and mind Patanjali is related with other two works — *Mahābhāsya* and *Yogasūtra.* Thus Caraka, *Mahābhāsya* and *Yogasūtra* are linked together as the works of Patañjali The pertinent reason for bringing these works together may be their similar role in purification of body, speech and mind respectively In Buddhist scriptures, ten vicious acts are to be avoided, of them three are of body, four of speech and three of mind Purification of these by eliminating these sins, is essential for moral and spirtual advancement[46] It seems that the above equation of Caraka and Patañjali and the three texts was evolved on this basis Patañjali is said to purify body, speech and mind by the precepts of the *Caraka-samhitā*, the *Mahābhāsya* and the *Yogasūtra*[47] Though it would be interesting to make a comparative study of these three texts, it is difficult to prove them as works of a single author (Patañjali) because of heavier points against it[48] The verses put as evidence came after a long gap of time and as such their authoritativeness is not free from doubt Moreover, the following points go against the proposition

1 The quadruped arrangement of the subject matter is not universally followed by Caraka, the style is also quite different which leaves more towards Kautilya than towards *Mahābhāsya.*

2 There is mention of Mathurā and Pātaliputra and even Kashmir in *Mahābhāsya* but these places are conspicuously absent in *CS*

3 Technical points are also different The words '*Vātika*' etc interpreted as those which either pacify or vitiate *vāta* etc but in *CS* They have been taken only in the sense of vitiating the dosas Moreover, some diseases[49] and etiological factors[50] mentioned in *Mahābhāsya* are not met with in *CS*

4 There is no reference of '*Śakas*' in *CS* (Though it is in the Drdhabala's portion) which indicates its existence before 2nd cent B C when Śakas

entered into this country Moreover, neither *Mahābhāsya* nor *CS* mentions each other. Drḍhabala, Vāgbhata and the early commentators are also silent about it.

Similarly, CS is also different from the *Yogasūtra* in the following respects:

1 The style is quite different, *Yogasūtra* is in the form of sūtras while the other is in the form of discourses

2 In Caraka, Prajñā has been described as comprising of '*dhi-dhrti-smrti*' but this is not so in Yogasūtra.

3 '*Vaśitva*' is said as the result of '*Cittavrttinirodha*' in CS while in the *Yogasūtra* it is the cause of the same

4 Among, *Yoga-Siddhis, Aṇimā,* movement in the sky etc are mentioned in the *Yogasūtra* while this is not in *CS*

5 The eight *Angas* of *Yoga* are not explicity mentioned in *CS*

Thus, the author of *CS* is quite different from the authors of the *Mahābhāṣya* and the *Yogasūtra.* The main reasons of this confusion has been their relation with Nāga, composition of *Bhāsya* (by one on the Pānini's *Astādhyāyi* and by the other on the *Agniveśa-tantra*) and perhaps their contemporaneity, the first man to create this confusion was probably Svāmikumāra, the author the *Caraka-pañjikā* (7th Cent AD) who was followed by Bhartrhari, Cakrapānidatta, Bhāvamiśra etc

Impact of Buddhism:

Though Brāhmanism seems to be predominant in *CS*[51], the impact of Buddhism can not be overlooked This is evident from various facts, specified to the Buddhist culture found in CS The following are some of them

1 Certain peculiar words commonly used in the Buddhist texts are found in *CS* such as *Khuddāka*[52], *Khuddīkā*[53] *Jentāka*[54] etc the terms 'pratyaya' and 'āyatana' though not commonly used, have been given as synomyms of '*nidāna*' (cause)[55]

2 *Ksanabhahgavāda* of Buddhists is described in many contexts[56] the *dhātus* of the body originate according to *hetupratyaya* and perish after a moment giving place to the new ones Thus there is a continuous flux (*santāna* or *paramparā*) of the *dhātus* This is also known as '*Svabhāvoparama*[57] (termination by nature) The physician's role in this is to see that the unwholesome causes are discontinued and the wholesome ones which start the stream of healthy dhatus in the body are initiated[58] There is no cause needed in distruction nor is there any modification, they perish as they are [59]

3. In *CS.* (Sa. 1.95-97) '*Upadhā*' or *Tṛṣṇā* (desire) is said as the root cause of pain and its base (body). Dasgupta traced its source in Buddhist' *upādāna*[60]. '*Naiṣṭhikī Cikitsā*' is that which eliminates *Upadhā* and this is nothing but way to *nirvāṇa*.

4. In Buddhism, '*Prajñā*' has been given top position in eight pathways (*Aṣtangika mārga*) leading to cessation of pain. Accordingly, in *CS.* 'Prajñāparādha' (intellectual error) has been given the highest place among the causes of disease.[61]. Once it has been said as the only root cause of vicious acts and consequent pollution in environment which leads to epidemics and diseases.[62] The components of *Prajñā* are *dhī* (understanding), *dhṛti* (restraint) and *smṛti* (memory) and errors in them is known as *Prajñāparādha* which gives rise to all diseases. It consists of wrong understanding, loss of restraint and wrong action [63] It is to be noted that '*Smṛti*' and '*Samprajanya*' (alertness) are emphasised more in Buddhism[64].

5. According to Buddhists, the objects are mere aggregate of parts, they have no self. This concept is visualised in *CS.* in the context of the formation of embryo, which is said as aggregation of six *dhātus* (components)[65] —just as a building comes up by combination of several materials and a chariot by aggregation of various parts[66] Apart from five *bhutas,* Buddhist take *Vijñana* as the sixth one[67] while *CS* takes *Cetanā* (consciousness) in its place.[68]

   Even life, according to Caraka, is combination (*Samyoga*) of *sarīra, indriya, sattva* and *ātman* (CS SU 1 42) Cakrapāni has indicated here the momentariness and continuity (of Buddhists). Thus taking momentariness of the body and eternality of soul Caraka has synthesised both the views. In this way, they (Caraka sect) developed a distinct philosophy of their own characterized by synthesis of Vedic and non-Vedic views and thus adopted the middle path. About the nature of self also Caraka's view differs from the orthodox schools of Indian Philosophy[69]. Because of his accommodating the non-vedic sects, he was not received favourably by Brāhmaṇic tradition and is thus positioned with *ājivikas* and *nirgrathas*[70]

6. '*Vedanā*' in *CS*[71] is in the same form as in Buddhist Texts[72], complete cessation of *Vedanā* comes in the state of *mokṣa* which is the same as *nirvāṇa*. The four noble truths are also indicated in *CS*[73]

7. In Buddhist tradition, there are eighteen dhātus comprising six senses, their objects and congitions[74] Caraka, with slight modification, has described it as '*Pañcapañcaka*' by deleting '*manas*' (it is dealt with separately), he has made the groups of five (*Pañcaka*) Further he has added two more groups of '*indriya-dravya*' (*bhūtas*) and '*indriyādhiṣṭhāna*' (anatomical basis) and made five[75] The sense cognitions are *kṣaṇika* (momentary) and *niścayātmikā* (of decisive nature)[76].

The role of *manas* in *CS* is peculiar It is mostly as '*Sattva*' not because of predominance of Sattva quality but as it directs the self to perception and action which is the explicit signs of (living) beings. Some call it '*cetaḥ*' (carrier of consciousness)[77] Once '*Sattva*' has been defined as 'The *manas* predominant in *rajas* and *tamas*[78] In Buddhist tradition, *citta, manas* and *Vijñapti* are synonyms of *vijñāna*[79]

8. The concept of '*Pratitya-samutpāda* (dependent causation)[80] is also recognised by Caraka by saying that the existance of an entity is not caused by a single factor (*hetu* requires Pratyaya as well) nor is it cause-less[81].

9. *Pratyakṣa* (perception) and *anumāna* (inference) — these two means of investigation are recognised by Buddhists[82]. Caraka, as he believes in synthesis, says that means of investigation, for those who have scriptural background, are two-*Pratyakasa* and *anumāna* It becomes three only when scriptural knowledge is included [83]

10 *Ahiṃsā* (non-violence) which is so much emphasised in Buddhism has been mentioned in *CS* as the best promoter of *Prāṇa* (vitality)[84].

Date of Caraka

External evidences:

.1 Vāgbhata (6th Cent A D.) has explicity quoted Caraka[85].

2 Yājñavalkya-smrti (3rd Cent A D) has taken many things from the *Caraka-samhitā* such as the concept of *Saddhātvātmaka Purusa,* monthly development of foetus, six layers of skin, *añjali-pramāna* (measurement with anjali) of *dosas* and *dhatus,* 360 bones, the signs of *paramātman, yogasiddhis*[86] etc

3 Nāvanītaka (2nd Cent A D) has quoted many formulae from *CS* though mentioning the name of Agniveśa and not of Carakas

4 Aśvaghosa, the contemporary of Kaniska (Ist Cent A D.) has also borrowed many things from Caraka though he has mentioned Ātreya and not Caraka

5 The *Caraka-samhitā* was translated into Pahlavi languages in early centuries of the Christian era [87] Hence the original text muast be quite earlier

6 Milindapanha (2nd Cent B C) has many things similar to those in the *Caraka-samhita* For instance The *Vedanās* which have got important place in *CS* have been described in detail in this text The perception of *Rasa* in contact with gustatory sense organ has been mentioned as the method suggested by Caraka All this indicates antecedence of Caraka

7 Although Pāṇını (7th Cent. B C.) has mentıoned Caraka but ıt ıs used ın the sense of one of the Yajurvedıc tradıtıon and not as the author of *CS.*

Hence Caraka may be placed after Pāṇını (7th Cent B C.) and before Mılındapanha (2nd Cent B C.) e g about 3rd -2nd Cent. B C

Internal evidences

Philosophıcal background — Phılosophıcal materıal found ın *CS* ındicates ıts exıstence before 200 A.D *Sāṃkhya* Phılosophy dealt wıth ın *CS* is the earliest one whıch ıs definıtely earlıer than *Sāmkhya-karıka* (200 A D) There are no names of the three types of ***anumāna*** whıch are found ın *Nyāyasūtra* (200 A D.).Other materıal also show ıts existance before *Nyāyasūtra* Caraka's descrıptıon of *padārthas* ıs also based on some text earlıer than *Vaıśeṣıka sūtra*[89]. Parallel to the Brāhmanıc elements, there ıs also impact of earlıer Buddhısm whıch shows that Buddhısm was raısıng its head agaınst the orthodox tradıtıon Such condıtıon was prevaıling durıng the Maurya perıod

Relıgıous condıtıon — There are copıous references of Purānas ın the *Caraka-saṃhıtā* which show theır domınance at that tıme The Purāṇıc legends with regard to orıgın of certain deseases also confirm thıs The *samskāras* have been prescrıbed according to *Gṛhyasūtras*. Sımılarly *Sadvṛtta* ıs based on *Dharmasūtras.*

Polıtıcal condıtıon — At many places there ıs reference of kıng which indicates the reıgn of an emperor at that tıme '*Sāmanta*' and *mahājanas*' are also mentioned who had prıncıpal place ın the polıtıcal and economıc set up respectıvely It ıs also saıd that quackery becomes prevalent due to slackness of the Government and epıdemıcs spread due to neglıgence of the state Thıs shows the weak admınıstratıon of the state

The above condıtıon ındıcate that the *Caraka-samhıta* took shape when, though Buddhısm was developıng, Brāhmanısm was havıng upper hand The relıgıous lıterature was beıng gıven concrete shape ın the form of Purānas and Sūtras and relıgıous sacrıfıces were commonly performed Such condıtıon ıs met wıth durıng the perıod of Mauryas-Suṅgas (3-2nd Cent B C). There ıs some reference of weak Govt whıch may be ındıcatıng the wanıng phase of the Mauryan empıre when lawlessness was prevalent The descrıptıon of hospıtal ın *CS*[89] also confırms thıs because a chaın of hospıtals and dıspensarıes was establıshed all over the country durıng the reıgn of Aśoka Patañjalı also belonged to thıs perıod and theır contemporaneıty may be one of the factors ın confusıng the ıdentıty of Patañjalı and Caraka [90] Caraka may be placed a bıt earlıer than Patañjalı as '*Śakas*' mentıoned rıght from Patañjalı to Vāgbhata ıs conspıcuously absent ın *CS*[91]

Thus on the basıs of external and ınternal evıdences, the date of Caraka may be fixed as 3rd or earlıer 2nd Cent B C at the juncture of Maurya-Suṅga perıods

There ıs much dıvergence of opınıon on the date of Caraka Hoernle places Caraka between Kanıska and the Bower's mss as the Nāvanītaka contaıned at least twenty fıve

formulations of *CS* Mukhopadhyaya takes him in great antiquity and says that Patañjali (2nd Cent B.C) wrote a comm on it Meulenbeld takes a liberal view and says that 'Caraka's redaction of the Āgniveśatantra already existed or was made in the first two or three centuries of our era[92]

Caraka's contribution:

It is curious that the Agniveśa-tantra after being recast and annolated by Caraka began to be known as the *Caraka-saṃhitā* while other Samhitās like those of Suśruta, Kaśyapa etc. did not change name even after their redaction, even the Caraka-samhitā could not change its title after having been redacted by Drdhabala It shows that Caraka did not only retouch or redact the Agniveśa-tantra but recast the entire material changing its shape and form altogether. But it may be noted that the new title could not gain ground easily and it had to wait for centuries to be accepted by the intelligentsia. Nāvanitaka though quoting several formulae from *CS* did not mention Caraka but Agniveśa. It is only during the Gupta period when Drdhabala, a saivite, redacted it, the *Caraka-saṃhitā* became to be known as such and after the same Vāgbhata utilised it and Bhaṭṭāra Haricandra selected it for commenting upon[93]

Caraka's actual contribution in revising and enlarging the Agniveśatantra can be analysed and assessed by comparing the present *Caraka-saṃhitā* with the Samhitā of Bhela

The latter was one of the colleagues of Agniveśa and Both composed their treatises on the basis of their teacher's precepts Thus it can be conjectured that the original *Agniveśatantra* might be more or less similar to the *Bhela-samhitā* in size and contents. All the additions and improvements made particularly logic, development of the basic concepts and philosophical discourses in the light of Buddhism etc may go to the Caraka's credit. The description of the hospital also seems to be from him The detailed classification of drugs and pharmacological concepts also owe to him These are practically lacking or described briefly in the *Bhela-saṃhitā*

Dṛḍhabala

Drdhabala, son of Kapilabala[94] was born at Pañcanadapura[95] He was a devotee of Śiva and by His grace completed the *Caraka-samhitā* which was then incomplete by its one-third portion Drḍhabala added to it 17 chapters of *Cikitsā-sthāna* along with entire Kalpa and Siddhi sthānas [96] It is difficult to decide whether Caraka himself left this work incomplete or he had completed it but by lapse of time the text was partinally lost[97] The latter proposition seems to be correct which is indicated by the word '*nāsādyante*' (are not available) This lost portion was reconstructed by Drdhabala on the basis of other ancient treatises [98]

There is some controversy as to which seventeen chapters go to the authorship of Dṛḍhabala because there is difference in order of the chapters in different editions The Bengal (Jīvānanda) edition and the Bombay edition have two different orders The Bombay tradition is supported by commentators and as such is generally accepted

According to this, thirteen chapters revised by Caraka are 1-8 and those on *arśa, atisara, visarpa, madātyaya* and *dvivraṇīya* (14,19,21,24, and 25 of Bombay edition[99]) The 17 chapters include the chaptes on *Unmāda, Apasmāra, Kṣatakṣīṇa, Śotha, Udara, Grahaṇī, Pāṇḍu Śvāsa, Kāsa, chhardi, Tṛṣṇā, Viṣa, Trimarmiya, Ūrustambha, Vātavyādhi, Vātaśoṇita* and *yonivyāpat* Gaṅgādhara follows the order of the chapters as adopted in Bombay edition but takes serially 1-13 as revised by Caraka and the rest by Drdhabala Birajacharan Sengupta, however, has examined this by his own evolved criteria. According to this, the order approved by Carkrapāni stands correct except in one case where, in his view, *divranīya* is substituted by *udara-roga*[100]

Date of Dṛḍhabala:

External evidences

Drdhabala's father, Kapilabala, has been quoted in the *Aṣṭāṅgasaṅgraha* of Vāgbhata which is the work of 6th Cent A D As by that time he was quite renowned, he must have lived one or two centuries earlier

Internal evidences

Cultural data[101] point him to the Gupta period. Thus Drdhabala may be placed in 4th Cent A D Hoernle's contention that Kashmir recension of the *Caraka-samhitā* is the work of Drdhabala and as it has not found place in Rugviniścaya of Mādhava (though mentioned in *Madhukosa commentary*), Drdhabala is posterior to Mādhava preferably in the 9th Cen A D [102], but it is untenable because the Kashmir recension does not mean the Drdhabala's work On the contrary, it was a common tradition that the ancient treatises had textual varations in different regions and *CS* could not be exception to the same[103] Mādhava being Bengali and quite distant from Kashmir it was but natural that he was not acquainted with and consequently did not utilise the Kashmir recension

According to Hoernle, the order should be Vāgbhata-Mādhava-Drdhabala but as Vāgbhata has taken many things from the Drdhabala's redaction, the latter must be antecedent Thus, in fact, the order would be Drdhbala-Vāgbhata-Mādhava[104]

Dṛḍhabala's Contribution:

It is difficult to analyse the actual contribution of Drdhabala and the extent of his redaction in the present *Caraka-samhitā* As said earlier, on the evidence of his own statement, Drdhabala completed the text by reconstructing the one-third portion which was lost and not available then Thus Indu's statement that Caraka died after finishing only half of the text[105] is quite confusing and does not stand Apart from reconstructing the lost portion on the basis of other available texts, he probably retouched the entire text and made additions and alterations here and there which are not discernible but on the basis of circumstantial evidence some conjecture can be made

As he himself states, he adopted the method of 'Viśesonchaśiloccaya'[106] and thus completed the lost portion Further he says that he made it 'non-deficient in words and ideas and free from defects which affect the treatise[107]. It proves that he retouched the entire text and made the Samhitā complete in every respect as far as possible

Almost all the scholars are unanimous about the date (4th. cent. A D.) of Dṛḍhabala. This period of the Indian history is known as 'Gupta period' which is regarded as the golden age because of the renaissance of Indian culture and development of Indian sciences Like texts in other subjects, old medical texts too were redacted and new ones composed Thus it is not inconsistant to presume that the conditions prevailing in the Gupta period have crept in the Samhitā through Dṛdhabala For instance, the reference of the recitation of the 'Visnusahasranāma in fever (*CS*. Ci 3.311) seems to have been introduced during this period[108] Bhela does not mention this rather he has prescribed the worship of Śiva (*Vṛsabhadhvaja*)[109]. Caraka also states with the same in the preceding verse and mentions Brahmā, Aśvins, Indra etc in the following verse. **Thus** it can be concluded that this verse **is added** by Dṛdhabala Similarly, the **introducting** verses in the chapter on ***madātyaya*** (Ci. 24) seem to be his creation. Lastly, Dṛḍhabala might also have contributed to the literary embellishment[110].

Conclusion:

Three historical layers may be distinctly analysed in *CS* as follows

1 Ātreya-Agniveśa-1000 B C (original composition)

2 Caraka-3rd-2nd cent B C (Revision and enlargement)

3 Drdhabala-4th cent A D (Restoration and redaction)

Extent And Contents Of The Caraka-saṃhitā:

The subject matter of the *Caraka-samhitā* has been divided into eight *sthānas*[111] *(sections) and 120 adhyāyas* (chapters) The quadruped style of Pānini and Patañjali is present in remnant form in only chapters (1,2, Ci) Moreover, the matter of sūtrasthāna is divided into seven *Catuṣkas* (qudraplets) For instance, the first quadruplet deals with drugs and as such is called '*Bhesaja-catuṣka*' and the last one is '*Annapāna-catuska* (dealing with food and drinks) Two chapters at the end are known as *Saṅgrāhadhyāya* (concluding chapters)

The total number of chapters probably indicate the maximum life-span of man because the ultimate object of treatise is to promote longevity

The contents have been detailed chapterwise in the last chpater of the sūtrasthāna while in the Suśruta-samhitā it is in the third chapter of the same In Kautilya's and Vātsyāyana's works, it is in the beginning of the text

On the basis of a verse (*Siddhi* 12 50) it is presumed that there was also appended an *Uttaratantra* like that in the *Suśruta-samhitā* Cakrapāni declares it unauthoritative but it is certain that the view was current even upto the time of Cakrapāni (11th Cent A D). By this statement it appears that the uttaratantra contained detailed exposition of Tantrayuktis which the Agniveśatantra did not have[112] But again he says in the context of the *tantradosa* etc that the author did not deal here as they are described in *uttartantra*[113]. Its indication can also be observed in the present text In fact, the Samhitā ends on V 40 after the concluding verses informing about Drḍhbala and his contribution and the topic of *tantrayukti* is a superimposed matter which probably formed part of the *uttaratantra* Adding *uttaratantra* or *khilasthāna* was a traditional practice for improving (*Upabrmhana*) of the text and is found in almost all the other Samhitās (Suśruta, Vāgbhata and Kaśyapa) Thus, in *CS* too, the existence of the *uttara-tantra* can't be set aside as improbable. As in the end, in the beginning of the Samhitā also it seems, because of the laxity of the matter and contradictions with its own text, that the original text has been modified by the redactor certainly before the appearance of the learned commentators. The following points are worth noting —

1. In *SU. ch.1,* while naming the sages participating in the assembly Atri's name is conspicuously absent while other six seers of '*Saptarsi*' are named

2 The legend given elsewhere (Ci 1 4) does not tally with this There Atri and not Bhardvāja goes to Indra

3 Except in this place, Bhardvāja does not appear again anywhere

4 The actual subject matter starts from the definition of Āyurveda (SU 1 41) Before that tradition is traced how the science of life was transmitted from Brahmā down to Agniveśa etc Thus it is almost definite that some redactor, eitehr Caraka or Drdhabala, has manipulated the legend about the advent of Āyurveda At least the verses 6-22 are quite superfluous which can be deleted without affecting the text in any way Perhaps the list of sages has been given only to eliminate Atri and give prominence to Bhardvāja[114] The entire legend can be harmonised by replacing Bhardvāja by Atri and deleting the verses (6-22)

Contributions Of The Caraka-saṃhitā:

The major contributions of the *Caraka-samhitā* are as follows

1 *Scientific Symposia and Seminars*

The tradition of scientific symposia and seminars is rightly exposed in *CS* Discussion with experts was conisdered necessary for arriving at logical conclusion and to improve knowledge

2 *Fundamental doctrines*

Though the basic concepts are found in their formative stage even in Vedas, they are fully developed and crystallized in CS These concepts include the Theories of *Pañca Mahābhūta*, *Tridosa* and Pharmacodynamics (*Rasa-Guna-Vīrya-vipāka-Prabhāva*) All these are again based on the Law of Uniformity of Nature (*Loka-Purusa-sāmānya*) which was scientifically established by the sages

3 *Investigating attitude*

The method of investigation rather than emperical attitude has been advocated in *CS* That is why the word '*Parīksā*' has been used several times instead of '*Pramāṇa*' Moreover, proposition of a new *Pramāna* '*Yukti*' shows the rationa attitude of Caraka, examine and then proceed is the method of *CS*

4 *Psychosomatic concept*

The person has been duly recognised as *Saddhātvātmaka* consisting of matter as well as spirit This has been further advanced in the realms of Physiology and Pathology where both body and mind interact and cause events

5 *Individual variations*

Organism is better than mechanism and each individual has got his special make up called '*Prakrti*' (constitution) which is an important consideration in health and disease Drugs are to be administered to patients taking into consideration his Prakrti On one side, they theory of Tridosa is a generalised concept and, on the other side, the concept of Prakrti is quite specialised one Thus unique synthesis of general and particular is seen in *CS*.

6 *Expansion of ideas*

Previously Āyurveda was '*Triskandha*' (Having three *trunks*) which was expanded further by Caraka Nidāna-Pañcaka was developed from *Hetu* and *Linga*

7 *Concept of natural immunity and Nature-cure*

Caraka emphasised on the natural process for prevention and cure On prevention side, the *ojas* (principle of *Vyādhiksamatva* has to be potentiated and, on the cure side, the theory of *svabhāvoparama* is accepted The methods of treatment are only to help the nature It is the nature which prevents or cures diseases That is why emphasis has been given on *Rasāyana* therapy including *Ācāra-Rasāyana*

In course of time, *CS* earned great reputation and became the most authoritative text representating the School of Medicine *Hārīta* (Pariśistādhyāya, 12) says tha as lion is among animals, ananta is among reptiles and Śiva is among gods, Ātreya (The

Caraka-saṃhitā) is among the text on medicine. It was translated into Persian and thence to Arabic in the 8th Cent A D. Al-Biruni (11th Cent. A D.) obtained knowledge of Indian medicine through this text, *CS* has maintained this status till today when all the other ancient texts of medicine almost went into oblivion

References and Notes

1. CS.SU 3.30 (Atrija), 7.66 (Atrija), 21.62 (*Atrijaḥ Punarvasuḥ*); Ci. 12. 3-4 (*Atryātmaja, Atrija), 20.3 (Atrija*), 22 3 (*Atrisutaḥ*) These are mustly in concluding verses *Aśvaghosa* also testifies it (*Buddhacarita* 1.43).
2. Ibid. *SU.* 10.3 (*Bhagawān Punarvasurātreyaḥ*), 13.3,9 (*Punarvasu*), 14.71 (upadeṣṭā Punarvasuh) 15.25, 18 56, 25.3, 26, 26 9 (*Bhagwanātreyaḥ Punarvasuh*). Sometimes he comes simply as 'bhagawān' (*SU.29.7*) or '*Guru*' (*SU.* 17.5)
3. *Kṛṣṇātreya* is mentioned in *CS* (*SU.* 11.63) and BS. (*SU.*16.1 in 1.). Also in MBH. Śānti. 210.21 (*Kṛṣṇātreyaścikitsitam*).
4. CS. Sa 8 50
5. See Mukhopadhyaya G.N : *HIM,* II, 443-454 He missed '*Nārāyaṇa cūrṇa*') (*CS.* Ci. 16 70-71)
6. *Kṛṣṇātreyah punarvasorabhinna eveti Vṛddhāh*
7. Comm on Siddhayoga 4.13-15 (*Kṛsnātreyaḥ Punarvasuḥ*)

7a. Comm. on *Cakradatta* 4.16-18 (*Krṣnātreyah* Punarvasuḥ).

8. Śivadāsa on CS 1 255-56

8a Śrīkanṭha on *Siddhayoga* 10 23-28, 20 30, Arunadatta on *AH SU.* 6.20; Cakrapāni on *CS* Ci 3 197-199

9. Indu on *AS* SU 1 16-18 (*Carakagranthena Krṣnātreyo viruddhaḥ*)
10. See *Kāśyapa-saṃhitā*, Int. P 39
11. Ḍalhana on *SS Ci* 40, 51-53, Śrikanthadatta on Siddhayoga 79.3
12. *CS SU* 13 100 (*Cāndrabhāgi*), *BS SU* 18 1, 25 1 (*Cāndrabhāga*) Some take these words as indicating Ātreya's residence in the region of Candrabhāgā river (Atrideva *Āyurveda Kā Brhat Itihāsa* P 152) See Yādvaji's int on CS P 3
13. In the assembly of sages the name of 'Atri' is replaced by 'Ātreya'
14. This list is the same as in *CS* above except that *Aṅgiras* is replaced by *Kaśyapa.* Also *AH.SU 1.3* In *CS. Ch 1* the assembly of sages contains 'Ātreya' instead of 'Atri' perhaps to impose Bharadvāja as substitute of Atri

    Bhradvāja is seen participating in more than one seminars (*C SU* 25 10, Ci 1 34), once he is opposing the view of Ātreya and is later convinced (C.Sa 3 4, 28,31) All this goes against Bharadvāja of the legend who is said as teacher of Ātreya There is also a Bhardvāja with adjective as '*Kumāraśirā*' who undoubtedly is a different person (*C SU* 26 4, Sa 6 18) Cakrapāni on *CS* (SU 1 30-31) says that Ātreya Punarvasu was the disciple of Bharadvāja and quotes a verse from Hārīta in its support He also contradicts the view that Bhardvāja and Ātreya were one as it is nowhere stated Filliozat (*Classical Doctrine*, P 4, 9, 11) takes Bharadvāja as mythical The medical tradition is not called as 'Bhardvāja-sampradāya 'but' Ātreya-sampradāya' on the name of Atri-Ātreya

15. In MBH (Śāntı. 210.21), Bhardvāja ıs mentıoned as expert ın *dhanurvidyā* (archery) rather than ın medicine
16. *CS. SU.* 1.30-33, also Ḍalhana on SS U. 1.6
17. Ibid. *SU.* 25 24-25.
18. Ibid. *Ci.* 11.3; 19 3, 29.3.
19. Such vıews are observed even ın the perıod of *Upaniṣads* (see *Śvetāśvatara* Up. 1.2.).
20. Ātreya ıs said as '*bhisagvidyāpravartaka*' (founder of medıcal tradıtion — CS. Cı. 13.4) Ātreya-sampradāya was parallel to the school of surgeons founded by Dhanwantarı (*Dhānvantara-sampradāya*) In Harsacarıta, a physician ıs said as '*Paunarvasava*' (belonging to the tradıtıon of Punarvasu).
21 See Fılliozat's *Classical Doctrine,* P. 10-11
22 Mukhopadhyaya: *HIM,* III, P 656-58.
23. Ibid, P 51.
24 *Yudhıṣṭhira Mīmāṃsaka. Vyākarana śāstra kā itıhāsa* Pt. I, P 140.
25 Such as the concept of *Catuṣpāda,* Sodaśakala (*Puruṣa*), Prāṇāyatana, different views about creatıon, three eṣanās, semınars and symposıa, origın of *Rasa* in plants, *pañcamahābhūta agnīsomīya* concept etc. For Details see author's '*Āyurveda kā Vaıjñanıka ıtihāsa*' (2nd ed. 1981) PP. 94-100
26. *CS. SU.* 30.21
27. *CS. Sa.* 8.41; Cı 3 311-314, 9 98; 23 91-95
28. Ibıd Vı. 8 10
29. Puranıc legends were narrated see Ibıd Cı 8 3
30. Kāśikā 4.3.102
31 4.3.109 (Kaṭhacarakālluk), 5 1 14 (*Mānavacarakābhyām Khañ*)
32. Fılhozat. *op. cıt* , P. 21
33 Dasgupta: HIP, II, p 284
34 '*Manuṣyacarau bhıṣajau*' — *Taıt. Sam* VI 4.9
35 See Vıśwarūpācārya's Comm on *Yajñavalkya-smrtı* 1 2.32.
36. Ibıd; Kath Saın 27 6 6 2 (see Fılhozat *op cıt* , P 19-20)
37 Śukla yaju 30 18 (See *Kāśyapa-samhıtā,* Int P 43 44)
38 Lalıtavıstara, *Ch* 1 Caraka School was later recognısed and patronısed by Śaka kıngs *Saddharmapunḍarīkasūtra,* 13 (p 166) (see *Nasık ınscrıptıon* no 10)
39 *Carakā Yogābhyāsakuśala mudrādharınścıkılsānıpunāh pākhanḍa-bhedāh* — Rudra's comm on *Br Jataka* 15-1
39a Varahamıhıra mentıons Caraka as a sect alongwıth Śākyas, Ajıvıkas and Nırgranthas (*Br Jataka,* 15 1) also A L Bhasam *Hıstory and Doctrınes of the Ajıvıkas,* p 169
40 *Dhmāpakacarakapāmśudhāvakāh-Arthaśastra,* 2 29 13 15 Also Kāśıkā 5 1 17, 6 3 19
41 *Naısdhīyacarıtam* 4 116, *Bhāvaprakāśa,* Pūrva 1 60-65
42 Jātakamālā, p 63
43 C Kunhan Raja *Survey of Sanskrıt Lıterature,* P 277 (Q AVI)
44 Thıs hypothesıs ıs untenable on the followıng grounds

1. **The authenticity of the source is not clear and is doubtful**
2. Caraka is not a Buddhist like other courtiers of Kaniṣka.
3. Caraka is seen always moving How is it possible that such a person of independent and roving nature could have been bound to a king's palace?

45 *Bhāvaprakāśa*, op cit
46 Lalitavistara 20 4, Suvarnaprabhāsa 4 49-50
47 *Carakapañjikā, Āyurvedadīpikā, Patañjali-caritam, vākyapadīya, Bhojavrtti* etc Nāgiśa Bhatta quotes Patañjali as the author of Caraka 'iti carake patañjalih' '*Laghumañjūsā*, P 9) Some take it as some comm or redaction on *Caraka-samhitā* by Patañjali but it does not look sound as no such work has come to light There is another Patañjali quoted as alchemist and expert in metals in comm of śivadāsa (Mukhopadhyaya *HIM*, III, P 778)
48 For details see author's *Caraka-cintana*' pp 25-42
49 *Utkandako rogah*
50 *Dadhitrapusam pratyakṣo jvarah*
51 *CS. SU* 8 26, Vi 8 11, Sa 12 84; Ci 1.1 23, 4 31,38, 8.188, 9 101 etc.
52 Ibid. 9.1
53 Ibid. ch 3
54 Ibid 14 39 '*Jantāghara*' is a coomon term in Buddhist texts for bathroom (see MV. I 18 66) The term '*dantapavana* (*CS SU* 5 72,74) for tooth-brush is often used in these texts (see ***Pacittiya** Dhamma*, 40 etc) The word '*Varcahsthāna* (privy) used in Buddhist texts (CV VIII 10, 18,19) is also found in *CS* (SU, 15 6)
55 Dasgupta *HIP*, II, P 395
56 *CS Sa* 1. 46 50,93
57 Ibid *SU* 16, 27-28, Bhattāra Haricandra has mentioned it as Buddhist view ('*Svabhāvoparamah sadā*' *ityanena Bauddhapravacanamupahitam*)
58 Ibid 35-36
59 *See also Gaudapāda-kārikā* -4 7,29 (*Prakrteranyathābhāvo na kathañcid bhavisyati*) Also Nāgārjuna's Mādhyamakaśāstra 15 8, Baladeva upadhyaya *Baudhadarśana-mīmāmsā*, p 160,190
60 Dasgupta, op cit P 415 The word '*upaādatte*' used in *CS* exactly denotes '*upādāna*' (also see *CS Sa* 1 134-135) The process of Upādāna is described in *CS Sa* 4 8 Also Nāgārjuna op cit 24 6-7
61 *CS SU* 11 41, 43,
62 Ibid Vi 3 20 (*Tayoryonih Prajñāparādha eva*)
63 Ibid Sa 1 98-109
64 Bodhicaryāvatāra, P 108, 5 108 In Bhagavadgītā (18 29-35) *dhi* and *dhrti* are described but *smrti* is left out
65 *CS Sa* 3 3, Vi 8 49, SU 11 23 (*Yukti* has been recognised as a *Pramāna* probably to understand the origin of objects having aggregation of several factors as cause (*bahukāranavogaja*) The word '*dhātu*' used for these elements has been adopted by *CS*
66 *CS Sa* 3 14 See also the discussion in milindapanha (2 1 1) where negation of self is explained on the simile of chariot
67 Candrakīrti on Nāgārjuna, op cit 5 1 (*Sad dhātava uktāh, Prthivyaptejovāyākāśavijñanākhyāh*)

68. *CS. Sa.* 4.6; 1.16 Here '*Cetanā*' is parallel to '*Vijñana*'
69. Dasgupta: op. cit., P. 368-69
70. *Saddharmapuṇḍarīka.*
71. *CS. Sa.* 1.133-137
72. Nāgārjuna, Op. cit , 26,5-6
73. *CS. Sa.* 152-153 (*Sarvaṃ kāraṇavad duḥkhamasvaṃ cāntiyameva ca. Na cātmakṛtakam.*).
74. Baladeva Upadhyaya: op. cit. P 162-163.
75. *CS. SU.* 8. 3-11.
76. Ibid, 12. Cakrapāṇi comments that they are not so momentary as Buddhists think.
77. *CS. SU.* 8.4.
78. Ibid. 25.11
79. Laṅkāvatāra. 3.40.
80. *Hetupratyayāpekso bhavanamutpādaḥ pratityasamutpādārthaḥ- candrakīrti* on Nāgārjuna, op. cit , 1 1
81. *CS. Sa.* 1.58. For different aspects of causation see *CS SU.* 11 32
82. *Pramāṇavārtika 3.1* (*Mānaṃ dvidham, viṣayadvaividhyāt*)
83. *CS.* Vi. 4.5.
84. *CS. SU.* 30.15. Here, out of context, *ahiṃsā, vīrya, vidyā, indriyajaya, tattvāvabodha* and *brahmacarya* — these six are said as promoters of vitality, strength and delight They remind of the six *pāramitas* (*dāna, śīla, kṣānti, vīrya, dhyāna* and *prajñā*) of Buddhism
85. *AH.* U 40, 84
86. Yajna, *Prāyaścittādhyāya,* 70-180
87. Raja Kunhan: op. cit
88. Dasgupta, op. cit., I pp. 280, 281, 301-2; II. p 280-83 392-93, 400-402.
89. *CS. SU.* 15
90. See Filliozat op cit , P 22
91. The factors obstructing preception have been borrowed by *Mahābhāsya* and again by *Sāṃkhyakārikā* from the *Caraka-samhitā* Dasgupta could not trace it (see, *History of Indian Philosophy,* Vol I, 218-219)
92. Meulenbeld G J. The Mādhavanidāna and its chief commentary, P 403-4
93. Jayanta Bhatta in his *Nyāyamañjarī* mentions Caraka as a seer (*Pratyaksīkrtadeśakālapurusadaśābhedānusārisamasta-vyastapadārthaśaktiniścayāścarakādayah-* quoted in *Kasyapa-Samhita,* Int P. 43
94. Kapilabala is quoted by Vāgbhaṭa, Caraka, Indu, Śrīkaṇtha etc (see HIM, III, P 786-787)
95. *CS Ci.* 30.290, Si.12.39. '*Pañcanadapura*' is identified as Pantzinor' in Kashmir (see Hoernle's osteology, Int P 3)
96. Ibid. Ci, 30.289-90, Si 12 37-40
97. Mukhopadhyaya thinks that Caraka did not redact the whole of the *Agniveśa-tantra* (*HIM,III,* P 622) while Yādavji thinks it was done (see his Int on CS. P 12)
98. According to Cakrapāni, these were of Suśruta, Videha etc (*Tantrebhyah Suśrutavidehāditantrebhyaḥ*).

99 See Cakrapāṇi's comm on *CS Ci* 30 289 (*te ca carakasamskrtān yaksmacikitsā-ntānastavadhyāyān, tatha'rśo'tisāravisarpadvīraniyamadātyayoktān vihāya jñeyāh*) Also Yādavji's Int on *CS*, pp 11-12, 'The text having thirteen chapters mentioned in Mārkandeya (60 39-65) probably refers to the *cikitsāsthana of CS* prior to redaction by Drdhabala It also indicates that the redaction was taken up by Drdhabala after this portion of the Mārkandeya purāna was composed

100 See Mukhopadhyaya, op cit, pp 624-629

101 The elaborate description of drinking (CS Ci 24-3-20), facts on sexology including sexually transmitted diseases (Ibid Ci 30 133-190) which are common in affluent society and mention of *visṇusahasranāma* (Ibid ci. 3 311) are some of the instances

102. Hoernle *Osteology*, P 14-16

103 Jettaṭa refers to a number of such textual traditions like saindhava, vaisnava, paitāmaha etc (see Meulenbeld P 405) For detailed discussion see Mukhopadhyaya op cit, PP 630-33, author's *Vāgbhata-Vivecana*

104 *CS* (Jamnagar). I, p 100

105 *AS Ka.* 8.25 (*Carako' rdhakrte tantra brahmabhūyam gato yatah.*)

106 It is not quite clear from the comm The '*uñchaśila*' means '*rta*' (truthful) (*Amara.* 2 9 2) and '*viśesa*' means 'specific' thus it would mean 'collection of specific true facts or ideas.' He consulted the *Tantras* available at that time and collected ideas or facts which are specific on the topic and were tried as effective and successful See also Manu 4 5

107 *CS. Si.* 12 40 (*Idamanyūnaśabdārtham tantradosavivarjitam*).

108 It is said that visnusahasranāma is the creation of the Gupta period (see V S Agrawal's — *Kādambari eka sāmskrtika adhyayana*, P 81 This verse of *CS* is read in the *visnudharmottara purāna*, a work of the gupta period in the same form

109 *BS* Ci. 1.48, 2 40

110 His prose (Ci Ka 1 8) reminds of the works of Subandhu and Bānabhaṭta

111 *CS SU* 30 33-35 (*Savimśamadhyāyaśatam*); *Hitārtham prāṇinām proktamagniveśena dhīmatā*)

112 Uttaratantre tantrayuktivyākarane Agniveśatantre uttaratantrasaivānārṣatvāt

113 Comm on *CS Si* 12 41-45 (*Taduttaratantre Pratipāditatvanneha vilikhita ācāryena*)

114 The name of Bharadvāja has come six times in the short space of 24 verses

9.1.2

SUŚRUTA

K.R. SRIKANTA MURTHY

If India was the centre of attraction for other countries of the ancient world, it was mainly because of the intellectual achievements of her people. The great progress of tis country in philosophy and many utilitarian sciences made many scholars of distant lands to undertake journey to India seeking new knowledge Medicine was one such science and Suśruta one such great surgeon who brought honour and fame to this country.

Suśruta — his Identity

While we know much of Suśruta's achievements in the field of surgery, we know very little of his personal life. Scholars differ on his identity, date etc , as the name Suśruta appears in many ancient treatises, each one furnishing different informations, as shown hereunder:—

1 *Suśruta-saṃhitā* — mentions that Suśruta was the son of sage Viśvāmitra[1], he along with Aupadhenava Vaitarana Aurabhra Puskalāvata, Karavīrya, Gopuraraksita and others approached Divodāsa, the Kāśirāja (king of Kāsī), to teach them Āyurveda (science of medicine) especially *Śalya-Tantra* (Surgery)[2] *Divodāsa,* who calls himself as the incaranation of Ādideva Dhanvantari, the god of medicine, agrees to their request and teaches them *śalya-tantra* one of the branches of Āyurveda [3]

2. *Śālihotra-samhitā* — a treatise on the science of medicine of the horses (*Aśvāyurveda*) mentions Suśruta as the son of sage Sālihotra who learnt that science from his father Mitrajit, Gāndhāra, Garga and others were his classmates [4] It also mentions Ātreya, Agniveśa, Bhela, Parāśara and others as great masters of Āyurveda but does not mention Divodāsa, Suśruta Vaitarana and others[5]

3 *Mahābhārata* mentions[6] Suśruta as one of the sons of sage Visvāmitra, the teacher of Rāma and Laksmana, princes of Ayodhyā But it does not mention Suśruta as learning Āyurveda from Divodāsa, king of Kāsi Garudapurāna also mentions Suśruta as the son of Visvāmitra[7]

4. *Agnipurāna* states[8] that Suśruta learnt both human medicine (*Narāyurveda*) and medicine of horses (*Aśvāyurveda*) from *Dhanvantari Divodāsa,* the king of Kasi

Reviewing the above informations, majority of scholars opine that Suśruta, son of Viśvāmitra, was the desciple of Divodāsa, king of Kāsi, He learnt surgical branch of Āyurveda and wrote a book on that subject which is available to us as *Suśruta-saṃhitā*

Suśruta, son of Śālıhotra ıs a dıfferent person altogether, and ıs the author of *Śālıhotra-saṃhıtā,* a treatıse on medıcıne of horses

It is wıth Suśruta, son of Vıśvāmıtra that we are now concerned wıth

Even wıth ıdentıfyıng Vıśvāmıtra the father of Suśruta, there ıs some dıfficulty because of findıng more than one person of that name as shown below —

1 *Rgveda* has a Vıśvāmıtra as a 'seer' of many hymns, who was for some tıme the prıest of kıng Sudāsa[9]

2 *Rāmāyaṇa* mentions Vıśvāmitra as the son of kıng Gādhı, ruler of Kānyakubja. Vıśvāmıtra rules hıs kıngdom for some tıme and later became a great sage He taught mılıtary scıence to Rāma and Laksmaṇa, prınces of Ayodhyā.[10]

3 Viśvāmitra- the author of a treatıse on Āyurveda (not avaılable now) whose quotatıons are found ın the wrıtıngs of Dalhana and other commentators[11] who consıder hım as an ancıent authorıty

4 Vıśvāmitra — as the author of a treatıse on archery *(dhanurveda)*[12]

5 Viśvāmıtra — as the author of a treatıse on law *(dharmaśāstra)*[13]

Pandıt Hemarāja Śarmā opınes that Vıśvāmıtra of the *Ṛgveda* and the *Rāmāyana* is dıfferent person of earlıer date[14] Majorıty of scholars thınk that *Vıśvāmıtra* of the *Ṛgveda* and the *Rāmāyana* are one and the same person and also the father of Suśruta Yet others thınk that Vıśvāmıtra, the author of a medıcal treatıse, mıght be the father of Suśruta[15] Out of these, the vıew that Vıśvāmıtra of the *Rāmāyana* ıs the father of Suśruta has been generally accepted Consıderıng Vıśvāmıtra the medıcal author as the father of Suśruta has to awaıt suffıcıent proof by future research

In ıdentıfyıng Dıvodāsa the preceptor, we confront wıth the same problem, that of findıng many Dıvodāsas ın dıfferent ancıent texts such as —

1 *Suśruta-samhıtā* mentıons Dıvodāsa as the kıng of Kāśī, resıdıng at Vārānasī He states that he ıs the ıncarnatıon of Ādıdeva Dhanvantarı, the god of medıcıne In vıew of thıs and hıs mastery ın the scıence of medıcıne he ıs also addressed as Dıvodāasa Dhanwantarı Suśruta and others learnt Āyurveda, especıally ıts surgıcal branch from hım[16]

2 *Rgveda* mentıons a Dıvodāsa, father of kıng Sudāsa[17] of the Bhārata geneology, but ıt does not ındıcate hıs connectıon eıther wıth the Kıngdom of Kāsı, the cıty Vārānası, or of hıs knowledge ın Āyurveda

3 *Mahābhārata* refers to Dıvodāsa as the kıng of Kāśī and founder of the cıty of Vārānası; he suffered defeat from Haıhayas and resıded for sometıme ın the

hermitage of sage Bharadvāja, performed a sacrifice there and got a son named pratardana[18]

4 Harivamśa says that the kingdom of Kāśī was established by Kāśa He was succeeded by Dīrghatapā Other rulers of this geneology were Dhana, Dhanvantari, Ketumān Bhīmasena, Divodāsa, Pratardana, Vatsa and Alarka Divodāsa founded the city of Vārānasī during Kaliyuga[19]

5 *Agnipurāna* and *Garuda-purāna* mention Divodāsa as the fourth person after Dhanvantari in the dynasty of Kāśa[20]

6 *Kausitakī-Brāhmana,* (which is assigned to the period between 2500 B C and 2000 B C.) mentions pratardana, son of Divodāsa, as profitcient in Philosophy[21]

7 Pānini, the reputed Grammarian belonging to 7th Cent B C gives derivation of the term 'Sauśruta' and also mentions the kingdom of Kāśī and city of Vārānasī Kātyāyana (3rd Cent. B.C) mentions Divodāsa[22]

8 Buddhist pali texts like *Ayogrhajātaka* (3rd-4th cent B C) and *Milinda-Panha* (2nd-3rd cent B C) refer to a great Physician by name Dhanvantari

Considering all the above informations majority of the scholars agree that Divodāsa of the *Ṛgveda* is neither connected with kingdom of Kāśī nor with Āyurveda and is a person of great antiquity Different from him is Divodāsa of the *Mahābhārata* and other texts, who was king of Kāśī, founder of Vārānasī and preceptor of Suśruta, He was being addressed as Dhanvantari also because of his proficiency in Āyurveda

Date of Divodāsa and Suśruta

On determination of the date of Divodāsa and Suśruta there is divergence of opinions[23] However, fixing of the upper and lower limits of their date can be done with the available data Finding of the name of his son pratardana in the Kausītaki-Brāhmana makes us to assume 2000 B C , as the upper limit of their age, whereas the lower limit is the 7th cent B C , the date of Pānini who knows Kāśī, Vārānasī and also Suśruta Allowing a wide margin of about three or four centuries on either side, we may presume that Divodāsa and his direct disciple Suśruta flourished between 1500 and 1000 B C *

This date corroborates with the date of Ātreya Punarvasu, founder of the *Kāyacikitsā* (general medicine) branch of Āyurveda, who is later than Divodāsa and assigned to a period nearabout 1000 B C

Vṛddha Suśruta

Commentators like Dalhana etc , have in their writings quoted certain verses as of *Vrddha Suśruta* and of a treatise called *Sauśruta tantra*[24] These verses not being

*Susruta could not have flourished later than 1000 B C Mukhopadhyaya, III, 577

found in the extant Suśruta-samhitā indicate the existence of another Suśruta the elder and of a separate treatise by him Nevertheless, others disagree with it for want of sufficient satisfactory evidences It can be generally presumed that the original text of Suśruta-saṃhitā before its revision and redaction, be considered as *Sauśruta Tantra* (of *Vṛddha Suśruta*) which thereafter came to be known as *Suśruta-samhitā*

Redaction of Suśruta-saṃhitā

The extant *Suśruta-saṃhitā* is not the original text written by Suśruta but is a redacted one being acceptable, certain amount of doubt exists about the redactor Dalhana, one of the commentators of Suśruta-samhitā merely states that "Verily Nāgārjuna is the redactor[25] but does not furnish any other information about him. Who among the many Nāgārjunas of ancient times is this redactor? Suśruta-samhitā mentions Subhūti gautama, a close disciple of the Buddha, participating in a discussion[26] etc. which shows the influence of early Buddhism of 4th-3rd cent B C It also reveals the association of the surgeon with the king and his army, incorporation of mercury and other metals in treatment of diseases, mention of Southern India (*daksināpatha*) its mountains, rivers, cities (*Sahyādri, Śrīparvata, Devagiri* etc) and even words (such as Muraṅgi etc) and incorporation of Tantrayukti borrowed from *Arthaśastra* of Kautilya (3rd cent A.D) at the end of the book[27] These internal evidences, together with external evidences such as finding of quotations of Suśruta samhitā in the writings of Vāgbhata (6th cent A D) make us believe that Nāgārjuna, the physician (4th-5th cent A D) is the redactor of *Suśruta-samhitā*[28]

Differences of opinion exist among scholars regarding contribution of Nāgārjuna in the redaction The point at issue is about the Uttaratantra, the last section of the treatise, dealing with other branches of Āyurveda whether it formed part of the original treatise or it was composed by the redactor Nāgārjuna and added to the text Though there are many points — both for and against the prior existence of Uttartantra to argue either way, the opinion that it was added by the redactor Nāgārjuna finds more support

Whether Nāgārjuna wrote this section anew all by himself or he revised an incomplete or mutilated form of it available at his time, is another issue to be decided by further research That he has relied much upon other famous treatises on each branch of Āyurveda while doing the redaction, however, stands confirmed by his own references[29]

Emendation

Candrata, son of Tīsata (and grandson of Vāgbhata) states that he effected correction (Pāthaśuddhi) to the text of *Suśruta-samhitā* on the strength of the commentary of Jejjata on it[30] As Jejjata flourished during 8th-9th cent A D and Candrata belonged to 10th cent A D , it becomes certain that the treatise which had

been redacted by Nāgārjuna earlier was amended by Candrata and that is the one available now *

Commentaries

Though nineteen commentaries-both ancient and modern — on *Suśruta-saṃhitā* are known[31] only a few, of them are available now The earliest one is probably of Jejjata (8th-9th Cent A D) followed by those of Mādhava (9th Cent A.D.), Brammadeva (10th Cent. A D), Gayadāsa (9th Cent. A D.), Cakrapāṇidatta (11th Cent A D), Bhāskara (12th Cent A D) and Ḍalhana (12th Cent. A D.)

The only ancient commentary available in full and in print is that of Ḍalhaṇa known as Nibandhasaṅgraha Dalhana was the son of Bharatapāla, belonging to the Sūryavamśī brāhmana family residing at Aṅkolā in Bhādānaka region near Mathura, He was the physician in the court of king Sahanapāla (Sohanāla, Sahāla) of Yādava dynasty of Bhādānaka (modern Biyānā in Rajasthan)[32] reigning in the latter half of 12th Cent A D Ḍalhana was probably the disciple of Bhāskara, physician to king Bhillama V of Devagiri Dalhana's commentary Nibandhasaṅgraha — true to its name — is a repository of different versions, traditions and interpretations of earlier commentators of *Suśruta-samhitā,* expressing agreement or disagreement with many such views. It is thus of great value both academically and historically

Two other important commentaries viz , 1) *Nyāyacandrikā or Brhatpañjikā of Gayadāsa* (10th Cent A D) is available for *Nidanasthāna* only and has been published (2) *Bhānumatī* of Cakrapāṅidatta (11th Cent A D) is available for *Sūtrasthāna* only and has also been published

Translations

Suśruta-samhitā has been translated into Arabic as early as 9th Cent A D., on the orders of Baramak Khalif Yahia-ibn-Khalid (805 A D) by Ibn abilasibal known as Kitab-Shaushool-al-Hind or Kitab-e-Susrud, it is referred to by the famous physician Al-Rhazi (Rhazes) Its Latin translation by F Hesslar appeared in 1844-52, German translation by J A Vullars in 1846 and the first English translation by U C Dutta in 1883 Since then many translations in English and indian Languages have appeared including Eng Tr by K L Bhisagratna (Calcutta), 1907-11) The latest English one, being, that of G D Singhal et al (1987) [33]

Importance of Susruta-saṃhitā

Suśruta-samhitā embodies the teachings of Divodāsa Dhanvantari, committed to writing by his chief desciple Suśruta The surgical school of Āyurveda (Śalyatantra)

* Like the *Caraksamhitā,* the Present *Suśruta-samhitā* has four distinct layers of authorship and redaction
1 Vrddha Suśruta — 1500-1000 B C
2 Suśruta — 2nd Cent A D
3 Nāgārjuna — 4-5th Cent A D
4 Candrata — 10th Cent A D (ed)

founded by Divodāsa Dhanvantri came to be known popularly as "Tradition of Dhanvantari" (Dhānvantara-sampradāya) and its followers as "Dhānvantarīyas". Even Punarvasu Ātreya, the propounder of Kayācikitsa (general medicine) branch of Āyurveda, recognised them as authorities in that branch and advised to seek help for surgical treatment*[34], Importance of *Suśruta-saṃhitā* is all the more great because it is the one and only treatise on this branch available now, the treatises written by other colleagues of Suśruta viz Vaitarana, Puskalāvata, Gopurakaksita, Karavīrya, Aupadhenava, Aurabhra, Bhoja etc , being lost, *Susuta-samhitā* is a treatise par excellence on the subject of surgery as can be made out from a glimpse of its contents Written in a lucid style of classical sanskrit, containing both prose and peorty, it throws light not only on Āyurveda in general and Śalyatantra (surgery) in particular, but also on socioeconomic conditions of ancient India to some extent.

Nature and Contents of The Treatise

In its present form, the treatise consists of 186 chapters, grouped in six sections (*sthāna*).[35] The first section — (*Sutrasthāna*) has 46 chapters dealing with basic doctrines, description of seasonal regimen, surgical instruments, procedure of surgical and allied therapies, training methods, duties of the army surgeon, evolution, classifications and prognostics of diseases; properties of food materials and drugs etc.

The second section — *Nidānasthāna* — has 16 chapters dealing with aetiology, symptomatology, pathogenesis, prognosis etc , of some major diseases requiring surgical treatment

The third section — *Śārīrasthāna* — with 10 chapters describes the evolution of the universe, human embryology and anatomy with special emphasis on tissues and organs of surgical importance, physical and psychological constitutions of man etc

The fourth section — *Cikitsāsthāna* — has 40 chapters devoted to treatment of surgical diseases, prevention of diseases, rejuvenation (*Rasāyana*), virilification (*Vājikarna*) and other therapies, like oleation (*snehana*), sudation (*svedana*), emesis (*vamana*), purgation (virecana), enema (*basti*), inhalation (*dhuma*), nasal medication (*nasya*), mouth gargles (*kavala-gandūṣa*) etc.

The fifth section-*Kalpasthāna* — with 8 chapters deals mainly with toxicology (agadatantra) — It describes food poisoning, vegetable poisons, bite of poisonous animals especially snakes, rabid, dog, fox etc , scorpion, spider, rat, insects etc , inclusive of symptomatology and treatment

The sixth and last section — *Uttaratantra* is the biggest with 66 chapters devoted to the other four branches of Āyurveda, 26 for *Śālākyatantra,* (Opthalmology and

* Because of glorification as incarnation of god, Dhanvantari stood as a symbol of ideal physician Buddhist texts copiously mention Dhanvantari as physician Nāgārjuna mentions Suśruta in his Upāyahrdaya as a good physician and teacher The Nāvanītaka (*Bower Mss*) begins with dialogue between Kāśirāja (Dhanvantari) and Suśruta and so the Ayurvedic portion in *Agni-Purāna* This shows that Dhanvantari-Suśruta were more popular in Buddhist and Purānic circles as physicians (ed)

Oto-rhino-laryngology) — 12 for *Bālacikitsā* and *Grahacikitsā* (Paediatrics demonology/psychiatry), 24 for *Kāyacikitsā* (General medicine) and 4 for miscellaneous subjects including (*Tantrayukti*). Among the chapters of *Śālākyatantra*, 19 deal with *netraroga* (Opthalmology), 2 with *Karṇaroga* (otology), 3 with *nāsāroga* (rhinology) and 2 deal with *dantaroga* (dentistry), *galaroga* (laryngology) and *śiroroga* (diseases of the head)

Thus, the extant *Suśruta-saṃhitā* is comprehensive dealing with all the eight branches of Āyurveda, with its greater portion devoted to *Śalyatantra* (surgery). Thus the treatise stands out as a testimony to the high standard of surgery.

Apart from surgical knowledge and expertise in practical surgery, Suśruta remains pertinent even in doctrinal pathology He happens to be the first to clearly recognise the six stages of evolution of diseases (*kriyākala*) and has described them in detail[36] He also recognised blood as important pathogenic material

His method of classification of diseases is so comprehensive that it includes all the diseases known in ancient time and can also accomodate any new disease of the present or even future times [37] The definition of 'Svastha' (Health) is the ideal one and is wide enough to cover the one adopted by the World Health Organisation today[38]

Suśruta's views on duties of the surgeon, his professional conduct, philosophy of medical science, and of life and living are all exemplary and relevant for all times. Suśruta has thus laid the world in general and the science of surgery in particular, in a debt of gratitude to him by his inventions, innovations and advances both in theoretical and practical surgery

References

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2 SS I, 1/3
3 SS I, 1/21
4 *Aśvāyurveda/Śālihotra-samhitā* — Introductory verses
5 Ibid. *Aśvābhisekamantra*
6 *Mahābhārata — Anuśāsana parva* 4/54-55
7 *Garudapurāna* 149/43
8 *Agnipurāna Chs* 279, 292
9 RV III-33
10 *Rāmāyaṇa* I 51/65
11 DL on *SS*. II/5/17, III. 10/70 VI 54/39, 58/48 CP on *CS* VI 5/71-73
12
13 *Williams Monier* Sans-Eng. Dict O 995 under "Viśvāmitra"
14 *Hemarāja śarmā* — Introduction to Kaśyapasaṃhitā under 'Suśruta'
15 Priya vrat sharma — *Āyurveda-kā-Vaijñānika Itihāsa* P 63
16 *SS*. I 1/3

17. *RV*. VII. 18/28
18. *Mahābhārata — Anuśāsana parva* chs, 29 & 96, *Udyoga parva* ch 117
19. Harivamśa — ch. 29
20. Agnipurāna. ch 278, *Garuda-purāna ch* 139
21. *Kauṣītakī-Brāhmana* 26/5
22. Pāṇini — *Aṣṭādhyāyī* 6/2-37; 4/2-116, 4/2-97
23. For different dates of *SS*. refer
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24. *DL*. on *SS*. IV. 31/8, 36/23; 37/7, 38/39, Vi 24/16 etc
25. *DL*. on *SS*. 1/1/2; In *Bhānumatī*, Cakra does not mention name.
26. *SS*. III. 3/32
27. *SS*. IV 27-29, etc
28. *Dasgupta: History of Ind. Phil.* II, 428, *For details of* Nāgārjuna refer the concerned paper
29. SS. VI. 1/4, 6,13, etc also Mukhopadhyaya op cit PP 583-87
30. *Cikitsākalikā-vivṛti* — Concluding verses
31. Priya vrat sharma — Introduction to *SS*. XIII
32. DL Introductory sentences of *Nibandhasangraha commentary*.
33 Ray, Priyadaranjan, et. al , SS *Scientific synopsis* P 454, Mukhopadhyaya: op cit PP 582-83, I. Int. 30-31
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9.1.3

VĀGBHAṬA

B. RAMA RAO

Different Vāgbhaṭas:

Several Vāgbhaṭas are known in Indian history as authors of works on different branches of learning. Aufrecht's Catalogus Catalogorum mentions the following ten Vāgbhaṭas: 1 author of *Vāhatāanighaṇṭu;* 2. author of *Vāgbhaṭasmṛtisaṅgraha;* 3 son of Simhagupta, grandson of Vāgbhaṭa and author of *Aṣṭāṅgahṛdaya, Vamanakalpa* and *Vāgbhaṭīya,* 4 father of Tisata, author of *Cikisākalikā,* 5. minister of Mālavendra and father of Deveśvara, 6 son of Nemikumāra, a jain author of *Alaṅkāratilaka, Chandonuśāsana, Vagbhaṭālaṅkara* and *Śṛṅgāratilaka;* 7 author of *Padārthacandrikā, Bhāvaprakāsa, Ratnasamuccaya* and *Śāstradarpaṇa,* 8. author of *Vāgbhaṭakośa;* 9 Vrddhavāgbhata, quoted in *Todarānanda* and *Bhāvaprakāsa,* and 10 author of *Vāgbhaṭālaṅkāra.* Hari Shastri Paradkar and Nand-Kishore Sharma mentioned eight Vagbhatas apart from the authors of AS and AH. One more VB, a contemporary of Jaisiṃha Siddha Raj (1100 A D.) is also known, Gurupada Haldar in his Vrddhatrayī mentioned four Vāgbhatas

Vāgbhaṭa in Āyurveda:

There are three important medical works associated with the name of VB They are *Aṣṭāṅgasaṅgraha, Aṣṭāṅgahrdaya* (Saṃhitā) and *Rasaratnasamuccaya* The author of the third is definitely different and there have been discussions whether both the other two works were written by one author, but so far no unanimous conclusion is arrived at Important among all these Vāgbhatas are the two Vāgbhatas who authored AS and AH Hoernle, Keith, Jyotisachandra Saraswati, Hariprapanna Shastri, P K Gode and others including P V Sharma view the two Vāgbhatas different Contrary to this, Gananath Sen, Hari Shastri Paradkar, Yadavji Trikamji, Editorial board of Jamnagar edition of CS, Vogel and others view both the authors as one According to D C Bhattacharya, the author of AS, AH and also *Rasaratnasamuccaya* is one and the same

Studies on Vāgbhaṭa:

All particulars like works written, identity, date as well as religion of VB are a matter of controversy These subjects has been attracting since long the attention of several scholars Hoernle introduced the name Vāgbhata I and Vāgbhata II for the authors of AS and AH respectively Others to discuss and write on this subject were Keith, Winternitz and Gode who recorded the progress of Research on VB until 1938 In 1941 Hilgenberg & Kirfel translated AH into German and in the learned introduction

to it they summarised the earlier discussions and views by different authors and put forward their conclusions; Vogel has summarised and reviewed the discussions prior to him in his introduction to Vagbhata's *Aṣṭāṅgahṛdayasaṃhitā* (1965)

Among all the scholars who worked on the identity, authorship, religion and date of VB, P V. Sharma has made extensive study and research based on external and internal evidences and compiled a book of about 300 pages in Hindi entitled "*Vāgbhaṭa-Vivecana*". The book in 4 sections covers scientific study, cultural study, literary study and historical study. It can be said that he left no thing untouched. After discussion the internal and external evidences available and also the views of different authors on the subject, P.V. Sarma concluded that the authors of the two works AS and AH are different.

Vṛddhavāgbhaṭa or Vāgbhata I is the author of AS. The earlier classics of Āyurveda were devoted primarily to one branch of Ayurveda and VB I felt the need of compiling in one treatise all the eight branches of Āyurveda. The AS is a new type of work and it is the last among the ancient classical works and the first amongst compilatory works of medieval period.

Earlier to VB, only the works of *Ṛṣis* (sages) were accepted as authorities But VB accepts the authority of ordinary human beings as well. This trend of attitude was prevalent during Gupta period which is considered as the Golden Age in Indian history and AS is a representative medical work of this period VB stated that he compiled this according to the requirement of that age but at the same time he followed the earlier classics or *āgamas* [1]

About the life of VB nothing is known except what he wrote in AS in the beginning Brahmā, the progenitor made the complete Āyurvedic science in one lakh verses. Agniveśa and others independently compiled the individual branches after assimilating the complete knowledge in essence. My grandfather was a great physician by name Vāgbhaṭa and I am his namesake He had a son named Siṃhagupta and I am his (S·magupta's) son, who was born in Sindhu region After obtaining the knowledge from my preceptor Avalokita and from my even more respectful father, who had learnt the vast medical science, this exposition has been made well by me arranged according to the divisions of the science[2] It is clear from this that VB hailed from North India It may be supported by the fact that he includes the sight of a Dravida or Āndhra among the bad omen. Jejjata in his commentary on SS called VB Mahājahnupathy (Lord of Mahājahnu) DC identifies Mahājahnu with the present Majhanda near Karachi in Pakistan This may be accepted since there is nothing to contradict it

Madhyavāgbhaṭa:

Bhattacharya believes one Madhya Vāgbhata also on the basis of the commentary *Ratnaprabhā* of NK which refers to *Madhyavāgbhata* He also views that the author of *AS, AH, Rasaratnasamuccaya* and *Madhyavāgbhaṭa* is same[3]. The quotations of MVB are available in AS and AH DC views that there might have been one

independent work of VB which went into oblivion after the appearance of AS. He refuted the view of Hoernle and others that the authors are different on the following grounds: NK mentioned *Vṛddha, Madhya* and *Svalpa Vāgbhaṭas* but nowhere he mentioned the authors as different Cakrapāṇi, Indu and Candranandana, the early commentators as well as Arunadatta view the authors as one. DC supports the view that the same VB is the author of RRS, by the fact that Candraṭa, son of Tisata, quotes in Yogaratnasamuccaya the prescription "Vijayabhairava taila" from " Rasavāgbhaṭa" which appears in RRS with some variation. P.V Sharma refutes the view of DC. Though NK mentions MVB there is no other support for it There are certain examples, however, of a single work having bigger, middle and smaller recensions by different authors like Siddhānta-Kaumudī

Vāgbhaṭa or Bāhaṭa:

Some scholars opine that the original name of the author of AS was Vāgbhaṭa or Bāhaṭa. Bāhaṭa is its modified form. Indu in Śaśilekhā mentions Bāhata which also occurs in the commentary on Kauśikasūtra. The author himself mentions that he was the son of Vāgbhata and was a namesake of his grandfather Thus Vāgbhaṭa appears to be the original name which was later modified into Bāhata particularly in South India The work was very popular not only in India put in other countries, which is evident by its translation into Tibetan and Arabic and in both these translations the name is mentioned as Bāhaṭa. In South Indian manuscripts of several works the name (Bāhaṭa or Vāhaṭa) is frequently quoted It is reproduced in Tibetan as Phagol or Phakol.

Geneology & Nativity:

Vāgbhaṭa was the son of Siṃhagupta and grandson of Vāgbhaṭa. His father was a brāhmaṇa and his preceptor Avalokita was a Buddhist. He had his early education under the preceptor and later under his father VK at one place calls VB a Rājarsi (royal sage) This led Bhattacharya to infer that VB ruled over a small kingdom This is supported by the adjective used by JJ DC states that in the colophons of manuscripts of the *Cikitsākalikā,* the author Tīsata is mentioned as the son of VB But P V Sharma expresses surprise that Tīsata did not mention the name of VB in the first two verses wherein he named Sūrya Aśvins, Dhanvantari and Suśruta His son Candrata also did not mention VB in his commentary on the above work But this need not create doubt since the verse clearly mentions that "after prostrating Sūrya, Aśvins, Dhanvantari, Suśruta and others reverentially and also the feet of father" this clearly indicated that his father was a great physician, scholar and the non-mention of his name may be due to adjustment of the verse

With regard to the nativity, AS clearly mentions 'Sindhuṣu labdhajanmā" meaning 'who was born in Sindhu region' This may mean that he was born in Sindhu region and later migrated to some other part of the country However, the mention of the river Sindhu and of Śakas and Śaka women suggests that he certainly spent some years in Sindhu region VB mentioned that one should not live in a place which is not ruled by a king, and which is inhabited by people who do not follow dharma, but should live in a

place where food is abundant and water, herbs, firewood and others are also available, safety is assured, natural and beautiful landscapes are nearby and which is an abode of enlightened scholars. These attributes point to Ujjain and the mention of Avantibhūmi and Avantisoma support to conclude that VB migrated to Ujjain and settled there

The father of VB II is also mentioned as Siṃhagupta in the colophon of some copies of manuscript but the authenticity of it is doutful However, the practice of naming the successors by the name of predecessors was in vogue during Gupta period and the successive persons with the same name were identified by adding I and II and so on. This led Keith to infer that Vaghbata II was of the family of VBI P.V Sharma also agrees with this by supporting further that the citation from AS and AH are so accurate that it would have been the work of a successor of the same family and the period of the two is also proportionate to confirm that VB I is the grandfather of VB[4] II

Views on Two Vāgbhaṭas

The authors of AS and AH are referred to by commentators as *Vṛddhavāgbhaṭa* and Vāgbhata giving scope to the view that AS is earlier then AH To further complicate this problem a work *Madhyavāgbhaṭa* is also quoted by Niścalakara and in Śivadāsasena's commentary on AH called *Tattvabodha,* which quotes both from *Madhyavāgbhaṭa* and *Vṛddhavāgbhata* The name suggests that *Madhyavāgbhaṭa* was in between AS and AH i e. *Vṛddhavāgbhaṭa* and *Vāgbhata*

Cordier and DC view that AH had generally grown out of AS Cordier put forth the following arguments in support of separate authorship. the title AS is similar to that quoted in the ancient Arab sources as *Kitab Asankar or Astankar,* AS is the only work where eight divisions are found, it is in prose and verse like CS and SS, four stanzas of AS which do not occur in AH are included in *Mādhavanidāna* and AS does not mention mercury while AH mentions it

On these reasons, Jolly raised certain objections the dubious Arabic terms may be taken to refer both AS and AH, the eight-fold division is also observed in AH, some earlier medical classics are also found in full verse, much importance need not be given to the verse quoted in *Mādhavanidāna* since many verses were used to be mentioned and mercury is already mentioned in SS Vogel, however, reported two stanzes where mercury is quoted and which occur both in AS and AH Among the two similar works attributed to same or different authors with the same name, AS remained unnoticed while AH became more popular with the highest number of commentaries on it

A verse in AH is the basis for the view that AH is a condensed form of AS 'A vast heap of nectar has been obtained in the form of AS after churning the big ocean of the eight-branched medical science, from this has been evolved a separate treatise — the present one which is for the pleasure of those who are capable of making limited efforts, but which gives great result [5]

Vogel quotes another verse in the prologue which asserts that AH is based on the works of Agniveśa and says that these two statements are inconsistent[6] But a careful

study shows that it can be interpreted without any inconsistency. the author first gave the descent of the Āyurvedic Science — how it came down from divine scholars to human beings, among whom Agniveśa and others are mentioned as authors and teachers — and then the author says from those treatises.. 'This does not necessarily mean that this work is based on Agniveśa only, when the word 'others' is also added Jolly argued that AS is prior to AH because of its verse and prose composition[7] but it is refuted by Hilgenberg and kilfer They view that AS and AH are two different recensions of the same text since the prose portions of AS may be taken out without much effect. There is no specific Buddhist character of AH since besides some traces of *Mahāyāna,* Hindu features are also available in AS Thus the two authors Hilgenberg and Kilfer deprived the basis for Vṛddhavāgbhata and Vāgbhaṭa theory. Then they cited example of authors with the attribute vṛddha (older) like *Vṛddhāryabhaṭṭa-Āryabhaṭṭa, Vṛddhayogaśataka-Yogaśataka* etc and concluded that the attribute 'vṛddha' denotes only the author of an larged comprehensive treatise against shorter books and does not necessarily mean senior writer as opposed to a junior writer of a younger work[8]. They quoted one example to contradict that *AH* is an abstract of *AS*. *AH* says that among healthy persons, a woman of 16 and a man of 20 years produce healthy and strong child and if they are younger the children may be sick or short-lived and halpless This is suited to the Indian circumstances and this has been amplified in AS to the effect that a 21 year old man should marry approximately 12 years old girl but will father with her a strong child only when he is 25 and she is 16. Here AS makes a positive concession to the Hindu view, states Vogel, that the marital cohabitation should take place immediately after the first menses In spite of the fact that *AS* lost its originality and importance, Vogel views it as a valuable supplement and concludes that both *AS* and *AH* are written by one and the same author. The arguments in favour of one author put forth by some Indian scholars may be summarised as below-

The language and style are similar, both the authors are sons of Simhagupta, the subject matter dealt with is similar, the author of AH in the end mentions that it is a summarised version of AS, many verses of AS are found in AH without any change. Arunadatta, Bhaṭṭa Narahari, Candranandana and Indu accept the identity of both the authors

Arguments put forward in favour of different authorship are —

There is difference in langauge and style, *AS* is in prose and verse while AH is in verse The language is more sophisticated in AH appearing to be later and is more literary The autobiographical information available in *AS* is not available in *AH*. The colophon in prose at the end in the present copies may be a later interpolation There is difference between the subject in both the works

It is mentioned in AH that it is a summarised version of *AS,* but it is not indicated that the authors are same. The availability of verses of *AS* verbatim in AH does not support this since the author has clearly mentioned that it is a summarised version The views of commentators with regard to the identity of the two need not be given any importance since by their time the identity might have not been established Further, the

following arguments are in support of two Vāgbhatas. The author of *AS* was the disciple of a Buddhist preceptor and its influence is evident in the text, whereas in *AH* such influence in not found; even one or two references may be due to the influence of the basis *AS*. This is more evident by the substitution of Śiva and Śivasuta in *AH* in place of Jina and Jinasuta. In *AH* we find comparatively more respect to āgamas, Ṛsis and dharmaśāstras. It also appears not probable that the same author might have written two books on the same subject with similarity in language, style and subject. Internal evidences are also interpreted to support as well as to contradict it *NK* while mentioning *VB* refers him as son of Siṃhagupta, which clearly shows that he refers to *VB* of *AH*. With regard to the similarity and differences in subject matter, it is stated that the science of Āyurveda is an ocean and the occurance of some differences here and there, while summarising, *are* possible and that similarity is more in the two works.

There were many Vāgbhatas but in medical field the number is limited and hence it is possible that two of three might have been identified as a single one. It is also surprising that all the citations attributed to *VB* by Cakrapāni are from *AH*. He might have thought both as one. Though Indu, at several places, indicated that both are same, one statement raises some doubt: he mentions that the author of *Sangraha* mentioned remembering the subject in *Hṛdaya;* this establishes that AH was compiled earlier than *AS*. This makes us conclude that Indu did not have correct information about the identity and authorship of VB. Candranandana and AD also became the target of this misunderstanding.

Hemādri was the first to raise the question With regard to *internal evidence,* where two persons were supposed to be one for 2-3 centuries, that naturally effects the parentage and hence the statement of *NK* of 11th cent need not be taken as authentic. The citation of Candraṭa is not authentic since the date of RRS is fixed as 13th cent. A.D The statement at the end of AH clearly indicates that AS was a popular treatise of that age. AS itself was compiled viewing the difficulties in studying various tantras and collecting the cream of all the tantAH. There is nothing to indicate that the author is the same.

Gananath sen, Yadavji Trikamji and Hari shastri Paradkar established the identity of two Vāgbhatas on the basis of similarity of language and style, same name of the father and also non-availability of difference of opinion. Jyotisachandra Saraswati refuted this view As regards similarity of language, Caraka and Vācaspati Miśra are similar in this respect though the two are different authors Citation of passages from earlier works *verbatim* is also common in Āyurveda and other branches of learning The self-introduction of the author is not available in *AH* as already mentioned above Differences of views are also found in both the works and some of them are given below as examples, as given by PV Sarma, indicating the different identity —

Age of man fit for producing offspring is 25 years (*AS*)-20 years (*AH*) Dimbha not mentioned in the abdominal viscera (*AS*) — Dimbha is mentioned (*AH*) The joints of *snāyu, peśī* and *sirā* are 2000 (*AS*) — 2210, according to Atreya, which is not found in *CS* (*AH*); 4 types of veins are mentioned (*AS*) — 7 types (*AH*), marma is of 5 types

(AS) — 6 types (*AH*); the no of *marmas is as below. Māmsa-marma* 11 (*AS*) — 10 (*AH*); *Sirā-marma* 41 (*AS*) — 27 (AH), *Snāyuvaha* 27 (*AS*) — 23 (*AH*); *Asthi 8* (*AS*) — 8 (*AH*); *Sandhi* 20 (*AS*) — 20 (*AH*), *Dhamanī* — (*AS*) — 9 (*AH*) Total 107 (*AS*) — 97 (*AH*)

Gudā (anus) is *māmsa-marma* (*AS*) *dhamanī-marma* (*AH*); after delivery administration of oil with *Pañcakola cūrṇa* is recommended according to *CS* and jaggery-water (*guḍodaka*) is mentioned as a vehicle (*anupāna*) (*AS*)— Jaggery water is not mentioned. Two prescriptions mentioned in SS are recommended (*AH*). The citation of the author of AH at the end of his work giving the importance of his work does not indicate the identity but, on the other hand, indicates that there was considerable gap of time between the two Both the authors have quoted from *CS* & *SS*. Commentators are quite later and their views about the identity can not be authentic. The so called view based on a popular verse of unknown origin that Indu was the disciple of VB is also untenable, if he was, he would not have mentioned his preceptor without the respectful prefix 'ācārya' and in an unrespectful manner as "*Soyaṃ Vāhatanāmā śāstrakaraḥ*' (that author of the science by name *Vāhata*") Wherever he mentioned the author of AH he added the word-ācārya. This establishes that Indu was not a contemporary of *AS*.

Apart from the above the following reasons are also put forward in support of the separate authorship· Nowhere in the text of AH it is mentioned that the author is *VB*. *Sangraha* mentions the *kalpa* (preparations) of substances like *kukkuṭī, kañcukī* and *palāṇḍu* but they are omitted in *AH* most probably because they were not in use during its time. This can be supported by the statement of the author of *AH* that he has described the *rasayana* preparations which are practical and applicable to the age The author of AS mentions the Śaka kings in whose reign the use of *palāndu* (onion) was popular and by the time of AH the reign of Śaka disappeared and the Vedic religion which prohibits the use of onion, reappeared. The difference in AS and AH in respect of the age of the male fit for reproduction may be due to the change of time 25 and 20 years of age might have been prevalent for the male during the period of AS and AH respectively The author of AH added several important items which were mentioned by the later commentators on the basis of *AS*.

Nand Kishore Sharma refutes the above since Āyurvedic works or classics were not in the form of unalterable sūtras like those of grammar etc. one cannot expect the *verbatim* citation and hence the same citations by two books can be taken to support that the author was same. The difference in language and style also need not indicate the different authorship It is obvious that the passage of time bestows maturity in learning and schollrship which influence the language and style of the same person and hence AH is more sophisticated Since he had already given the name of the father in the early work, the author might not have felt it necessary to repeat it again in the work which is a summary of the earlier one The difference of opinion in the two is also natural — the first work was compiled after studying the various treatises of Āyurveda but by the time of the compilation of second work the author had the practical experience by the passage of time and observed the difference prevalent in the society and incorporated them in his work Atrideva Gupta, Editorial Board of Jamnagar edition of *CS* and

Bagwat Simhji also support this view Other scholars who support the two author theory are Jolly, Hoernle, Keith and Gode including Hariprapanna Shastri

The last verses in AH clearly indicate without doubt that AH is the later summarised version of AS, the doubts is whether the author is one or different. During this period the practice of writing comprehensive and detailed treatise and later summarising them into smaller works due to the vastness of the earlier treatise was common. Examples of summarised versions by the same as well as different authors are available. However the attributes *bṛhat* for the bigger and *laghu* for the smaller were used Here, instead of calling laghu AS the book is called AH which may be to indicate that this is not purely a summarised version but a brief recension expounding the subject of AS. Unlike the other summarised versions, we find in AH the difference in style, subject, religious and cultural views as well

With regard to the references by the commentators, JJ quotes VB and not Vrddha VB. *CP* also quotes only VB and all the quotations are from AH P.V Sharma views that during the time of JJ and CP, *AH* was popular and *AS* almost disappeared from the purview of scholars. AD and Indu might have realised the existence of *AS* and traced it and probably thought both to be by the same author. After further studies and comparison of the two, later commentators mentioned the authors as separate. Thus it appears, as concluded by P.V. Sharma, that there were three stages with regard to VB: first: only AH was known and was popular; second: Both *AH* & *AS* were known as the works of the same author; and third: the authors of both the works were known to be different This historical development appears to be nearer to fact and it is clear that two Vāgbhaṭas are different and are known as Vrddhavāgbhata and Vāgbhata, Vāgbhata I and Vāgbhata II or Gadya-Vāgbhata and Padya-Vāgbhata

Religion

In AS some Buddhist gods and goddesses are mentioned which led some scholars to believe that VB was a Buddhist, while the narration of Vedic practices led other scholars to believe him a Vedic follower P L Vaidya projected the following to establish VB a Buddhist some special material collected from Buddhist āgama works is included; obeisance to Buddha is found; mention of brāhmanas, cows and devas and other Vedic practices is not improper since the book was meant for the people of all faiths, Further, the word '*deva*' may refer to the Buddhist gods also, Buddhist religion spread to far off countries and along with it AS also spread, probably because it was authored by a Buddhist. Apart from the Buddhist, the brāhmanas who were not averse to Buddhism also followed the work in study and teaching. In the treatment of *Kustha*, worship of *Jina*, Jinasuta and Tārā is mentioned[9] In the subject of *bālagrahas* chanting of 12-armed Avalokita is mentioned[10] The *mantras* at the time of collection of herbs are Buddhist The practice of sacrificing *pañca pindas* and the prohibition of night meal as a *prāyaścitta* for killing aquatic animal are also Buddhist The renunciation of ten types of evil deeds also has a Buddhist base The instruction to follow the middle path (*madhyamā pratipad*)* among all the virtuous injunctions appears to be based on

* *Madhyamā Pratipad* is the basic concept of Buddhism (See Lalitavistara, 26 (P 303), *Dhammapada* 20 10-11, Baladeva Upadhyaya *Bauddhadarśanamīānsā*, pp 52-54) (ed)

Mahāvagga[11] Hari Shastri Paradkar further pointed out the four types of death for followers of Buddhism and also certain Buddhist gods and goddesses and Mantras like Aparājitā, Māyūrī etc. Indu, at one place, suggests that VB was a Buddhist. He was the disciple of Buddhist Avalokita, the quality of 'following Buddha' among the qualities of a good physician can not be expected to be from the author of a Vedic follower Rudrapāraśava stated that the mention of *VB* by Hemādri — who was a *dharmādhikārin* and staunch follower of Vedic religion — with the attribute 'ācārya' suggests that *VB* was a brāhmaṇa originally and when the Sindhu region was attacked by foreign invaders, VB might have embraced Buddhism. Keith and P.C Ray also support this Contrary to this, Ganesh Tarte, Bhatta Narahari, Krishna Rao Sharma, R.V Patwardhan and other scholars believe VB a Vedic follower on the following grounds: Worship of cows, brāhmanas, Hara and Hari, propitiatory rites of *Atharvaveda* and propitiation of unfavourable planets are Vedic acts They interpret the word 'Buddha' in the invocatory verse to mean 'a learned one' and not Lord Buddha It is also difficult to believe that a Buddhist wrote Āyurveda** which is an '*Upaveda*' and which follows the Vedic sages like Ātreya etc The statement of *VB* that nothing is against the *āgamas* (scriptures) refers to Vedas only since Buddhist works are independent and rational The initiation of the disciple is also according to Brāhmaṇa rules Wines, meat and others are not prohibited. Tārā and other goddesses are also referred to by Vedic followers like Varāhamihira and others and they are found among the Śākta cult also Being a Vedic follower it is natural that he was tolerant to Buddhism Some scholars view VB a Jaina on the availability of the words *Arhat* and *Jina,* which is not acceptable The word Jina was used to denote Buddha after his salvation The points of PL Vaidya like *pañca-pindapradāna* and prohibition of ten sinful acts and the observance of middle path have also basis in the Vedic sūtra literature With regard to the religion, Ranganath Joshi states that VB was not a follower of Vedic religion but of Buddhism In support of his view, he quotes the mention of Buddhist gods, goddesses and practices and compares them with the relevant passages in Buddhist works P V Sharma concluded that VB was born in a brāhmana family and was the follower of Vedic religion but observed equal respect and interest towards Buddhism since he was the disciple of a Buddhist guru.

Date

Opinions with regard to the date of VB also vary like that of his identity The different views range from 2c B C to 13 A D The views are as follows — Kunte (2c B C), Jyotisachandra Saraswati (1c B C -AS, 5C A D or little earlier AH) Caritrakosa, Rudrapāraśava and Patwardhan-2c , Gurupada Haldar 2-3c, Jamnagar CS edition before 4c , Paradkar, N K Sharma, Yadavji, Ganathasen, and Atrideva-first half of 5c , Hariprapanna Shastri, Haridatta Shastri, Dasgupta and Kutumbiah-6c, Hoernle, Winternitz, Keith and Mukhopadhyaya — 625 A D for VBI, 8-9c for VB 11 , Agrawal 7c, Maharashtra-Jñāna-Kośa and Jolly-before 8c, Filliozat-7-10c Zimmer and Roy 9c, Bhattacharya-900 A D and Cordier- 1196-1218 A D The opinion of the majority of scholars now favour to allot VB to the Gupta or Post Gupta period

** 'Āyurveda' does not come in Buddhist texts, instead they mention' *Cikitsa* (ed)

Kunte in his introduction to AH decided the date as 1 or 2c, B.C on the basis of the following reasons· The work is based on the vast literature of Āyurveda, the three humour concept is in its original uncomplicated form which occurred during the time of Huen Tsang; meat-eating is favoured which suggests that scientists did not agree to the prohibition of meat-eating by Buddhists; Six Rasas (tastes) are mentioned as described in Upanisads and Vaiśeṣika; ancient regions like Sauvīra are mentioned, the meaning of *hiṃsā* is taken in the same view as that of Kātyāyana; Buddhist practices and instutions like caityas are mentioned, the view that one should not serve a non-aryan was prevalent during pre-Buddhist or early Buddhist time, Śṛṅgaberapura of south and the southern wind are praised and contacts with South India started with Patañjali, drinking of wine is normally accepted; the geographical data confirms to that of early Buddhist period, the meat of cow is prescribed which suggests the early Buddhist period and during the 4 and 5c AD, it was popularly prohibited due to the spread and importance of Brāhmaṇadharma; Court physician is mentioned under an Aryan king; Since Caraka is mentioned, VB must be after Patañjali. The method of classification is that of early Buddhist period The description of herbs pertaining to Asia are based on Vedic or Buddhist writings. VB lived long before Hemādri

Jyotiṣachandra Saraswati stated that many quotations from VB are included in the work of Mādhava suggesting that VB was popular by his time and alteast two centuries are required for the book to become popular and hence VB should be allotted to 5c A.D. or even before He also stated that VB I is earlier than VB II and lived before Christian era since AS mentions about Śaka kings and Śaka women[12] Historical dictionary allots VB around 150 A.D. on the same basis Rudrapārāśava accepted the date of VB as 2c, A.D as fixed by German scholars without any of his views. R V Patwardhan fixes the end of 2c. or early part of 3c A D VB was native of Sindhu probably before it was attacked by yavanas in 8c Cosma-de-koros has edited a work which mentions CS, SS, & VB and which is allotted to 8c by Huth Rasa treatment is not found in VB which developed after 6c A D Mercury is mentioned and one verse from AH is available in *Bṛhatsamhitā of* Varāhamihira

Gurupada Haldar in his Vrddhatrayī allots VB to 2-3c, A D [13] since VB was a follower of Nāgārjuna and Bhartrhari quoted VB, the grandfather of the present VB, as a learned one in grammer He also stated that he was a contemporary of Śaka king Vāsudeva, grandson of Kaniska and was probably a court-physician The editors of the Jamnagar edition of *CS* view that VB lived after Drdhabala since VB quotes from the portion redacted by Dṛdhabala and Drdhabala neither referred to nor followed VB It is further supported by the fact that JJ, who was the disciple of VB, commented on the portion of *CS* redacted by Drdhabala Further it is stated that VB lived before 7c AD because I'tsing came to India between 675-685 A D. *Mādhavanidāna* and Varāhamihira quoted VB Bhattāra Haricandra was a contemporary of VB and Sāhasāṅka (375-413 A D), hence VB may not be later than 4c A D On similar reasons Hari Shastri Paradkar allots VB to the second half of 4c A D Filliozat viewed that itsing refers to Nāgārjuna, the autuor of *Yogaśataka* and not VB but this view is not sustainable However, Itsing helps us to conclude that the person referred to by him might have lived around 600 A D. Filliozat further states that AH reproduced stanzas

from *Yogaśataka* the fragments of which were found in Central Asia and the date of which is fixed as 7c. A D. This suggests that the original text of *Yogaśtaka* must be earlier and VB could have quoted from it. Cordier thought VB a contemporary of king Jaisiṃha (1193-1218 A.D.) on the basis of *Rājataraṅgiṇī* but the dates of *Rājatarṅgiṇī* are not always convincing, further *Rājataraṅgini* edited by Stein does not contain the reference.

G.N. Mukhopadhyaya does not give any definite date for VB 1 but states that he was later to Caraka and Susruta and mentions that VB is included among the Vrddhatrayi indicating that he was not much later[14]. Hoernle allots VB to 7c A.D.[15] on the basis of (Itsing Itsing, the Chinese pilgrim stated that a person summarised 'lately' the eight sections of medical science and made them into one)[15a]. According to Jolly, the reference of Itsing is towards Suśruta, but by the word 'lately' Hoernle says that it refers to VB I. Further Itsing recorded its popularity also stating that all physicians in five parts of India practise according to this book and physician who is well versed in it never fails to live by the official pay.

Since Vogel discarded two-author theory there was not much difficulty for him to fix the date. Quoting the Chinese pilgrim Itsing and Firdausal-Hikmat he says that VB lived in the middle of 7c A.D. The popularity mentioned by Itsing must refer to AH only since it was so famous in Persia also by that time Meulenbeld views that VB must be later than Dṛḍhabala since some stanzas of *AH* are taken from Dṛḍhabala's portion of *CS* Mādhavakara also included verses from *AH*. Apart from all these, another important point is that a Sanskrit medical work closely similar to AH was translated into Tibetan in 8c A.D Firdausul-Hikmat of 9c A D also refers to AH. Considerable time is required for AH to become famous in Persia in 9c A.D All these evidences agree according to Meulenbeld in fixing 600 A D as the date of composition of *AH*[16].

A review of the view of different scholars makes us conclude that the following are the basis for the fixation of the date of VB:—

1 Reference by I-tsing,
2 Translations and quotations from AH,
3 Relation to Varāhamihira and Drdhabala;
4 Development of *Rasacikitsā,*
5 Śaka rule,
6 Relation to Bhattāra Haricandra, Indu and JJ,
7 Mention by other commentators,
8 Attacks by Muslims

1 Apart from what mentioned earlier, itsing refers to the worship of Avalokiteśvara which is found in AS but not in AH He also refers to eating of palāndu and AS describes palāndu in the *Rasāyanaprakarana* while it is omitted in *AH* Thus I-tsing's reference may be to *AS*

2. *Mādhavanidāna* was translated into Arabic in 8 or 9c A D AH was translated in 8c. A.D This shows that by this time *AH,* which appeared after *AS,* was very

popular. The appearance of verses of *AH* in *Mādhavanidāna* also supports this and it gives a later limit i.e 7c A D.

3 Varāhamihira has quoted a verse on Rasāyana from AS while Kapilabala, Dṛdhabala's father, is quoted by AS

4 Some scholars view that *rasavāda* started and developed from 8c. A D. onwards and the mention of *rasa* by VB takes him to a later period. Though we find the word '*rasa*' to indicate mercury in *CS* & *SS*, AS mentions one prescription in which the internal use of mercury is found. Obviously it was to be used after purification though the details of purification are not mentioned Nityanātha, author of *Rasaratnākara* also refers to VB, hence it is not sustainable to say that VB lived after 8c A.D when *rasavāda* started.

5. AS mentions at several places Śakas. Kuśāna dynasty was a branch of Śaka and Sindhu region was an important centre of activities of Śakas and probably due to this the name Śākadvīpa came into being. The Śakas ruled upto the end of 4c. A.D. Varāhamihira also uses the words 'Śakendra' and 'Śākadvīpa'

6. A famous popular verse mentions JJ and Indu as the disciples of VB but on several other evidences this is not accepted by scholars. JJ appears to be the first to quote VB. DL, AD, Indu, VR, Hemadri, SD, NK quote both Vṛddhavāgbhaṭa and VB. CP and JJ quote only VB II. Vṛndamādhava of 9c. A.D. quotes VB as well as many of his prescriptions.

7. Cakrapāṇi, at all places, quotes VB referring to AH while Aruṇadatta and Hemadri quote VB I and VB II respectively Probably Cakrapāṇi had only AH before him. Other commentators use Vrddha and laghu to denote VB I & VBII

8. The attacks of Muslims started from 7c. A.D onwards on Sindhu region and after that the possibility of writing of scholarly works is less.

On the basis of all these external evidences it can be safely said, as concluded by P.V. Sharma, that VB was a contemporary of Varāhamihira who lived from 505-587 A.D.

The internal evidences also support that VB lived between the period of *Kāmasūtra* (400 A.D.) and Varāhamihira (6c) and thus the date of VB I may be about 500 AD and that of VB II about 600 A D. Some of the internal evidences in its support given by him are as below:—

AS contains words prevalent in Gupta period. Style is prose and verse and appears to be earlier than AH. The influence of several poets from 4 to 6c A D is also seen P.V. Sharma notices mostly the influence of Kirātārjunīya of Bhāravī The geographical data of VB is similar to that of Kālidāsa and the Calander is based on Kauṭilya's *Arthaśāstra*. An emperor was ruling the country and expeditions, wars and death of men were common. King was under the control of minister, guru and purohita who were all well-versed in polity and the *guru* was an expert in Atharvan practices VB mentions Viṣakanyā and prohibits the service under a king of Non-Aryan origin,

probably he left Sindhu after the victory of Yaśodharman and came to Ujjayini. Purāṇas, Dharmasūtras and Smṛtis were ruling over the social life of the period and citizens lived according to the methods mentioned in the *Kāmasūtras*. Both spiritual and materialistic modes of living were found Kalpasūtras were followed with the observance of sacrifices and other religious rites. Śiva, Viṣnu, Śakti, Sūrya and Gaṇeśa were worshipped. Both Vedic and Buddhist followers were found.

Other Works

Hari Shastri Paradkar mentioned four works of VB: *AS, AH Aṣṭāṅgnighaṇṭu** and *Aṣṭāṅgāvatāra*[17]. First two are already discussed and the third *Aṣṭāṅganighaṇṭu* is supposed to be a supplement of *AH*. No other commentator of *AH* referred to *AN*. The colophon in the manuscripts in Tanjore and Madras mentioned this as a supplement of *Aṣṭāṅgahṛdayasaṃhitā*. *Aṣṭāṅgāvatāra* is mentioned by AD and JJ and this led Paradkar to believe that it is the work of VB, P.V. Sharma states that the first verse in the AN preserved in Madras Oriental Manuscript Library clearly suggests that the author was a worhsipper of Aṣṭamūrti Śiva and was a follower of Pāsupata Śaiva cult. A commentary called *Vaidūryakabhāṣya* on *AH is also stated to be by VB II while some others believe it to be by a Tibetan Bhikṣu,* named Jarandhara and a Śākya Dharmaśrīvarmān. Some scholars view Siddhasāra also as a work of VB on the basis of the quotation of Aruṇadatta. But Siddhasāra is a work by Ravigupta[18] as evident by the quotation of AD himself elsewhere Quotations from *Madhyavāgbhaṭa* are given by Śivadāsasena and Niśćalakara, the Bengali commentator and probably the author of *Madhyavāgbhaṭa* may be a Bengali called Vāgbhatagupta.

Rasaratnasamuccaya:

The work on *Rasaśāstra* called *Rasaratnasamuccaya* by Vāgbhaṭa deals with the preparation of mercury in the first 11 chapters and in the 12th to 30th chapters diagnosis and treatment of different diseases. In the beginning of the work the following Rasasiddhas and authors are mentioned Ādima, Candrasena, Laṅkeśa, Bhāskara, Vyāḍi, Nāgārjuna, Yaśodhara, Govinda and other 27 Rasasiddhas, Bhairava, Nandi, Manthāna Bhairava, Kākacaṇḍīśvara and other authors The work in the text refers to Bhāluki, Rasendratilaka, Vāsudeva and other tantras Detailed description of *Rasaśālā* also finds place where the installation of *Rasalinga* and its worship is recommended along with aghoramantra and rasāṅkuśī vidyā The work shows the developed stage of tantra along with Rasaśāstra.

The author has mentioned his name as Vāgbhatācārya and the name of his father as Simhagupta Both are found only in the colophons Some scholars like Krishna Rao Sharma, Rudrapāraśava and Haridatta Sastri believe the author of Rasaratnasamuccaya as the same Vāgbhaṭa who authored *AS* and *AH*, most probably based on the same

name of the author as well as author's father P.C Roy, Hari Shastri Paradkar, P.V. Sharma and all others view the author of Rasaratnasamuccaya different which is now almost established. AS and AH do not mention RRS and the commentators on AS and AH also do not mention VB as the author of RRS. Rasakriyā procedures involving mercury are not mentioned in AS or AH and RRS in definitely a later work written after the development of *Rasaśāstra*. Arsenic and opium are mentioned in RRS whereas they are not found in *AS* or *AH*. There are number of diseases or types of diseases in RRS which are not found in *AS* or *AH* The earliest known ms of RRS is dated 1699 A.D. and in some colophons the author is mentioned as Nityanātha or Aśvinīkumāra in place of VB.

The following points are mentioned by P.V Sharma with regard to the fixation of date of *VB* of RRS[19]: The work quotes Nandi who may be Nandikeśvara, quoted in Kāvyamīmāṃsā and hence can be later than 8c. A.D. Nāgārjuna of 10C. A.D. has also quoted several *Rasaśāstra* works of medieval period like *Rasārṇava, Rasendracūḍāmaṇi, Rasaprakāśasudhakara* etc as the basis of this work. *Somaroga,* which is not found earlier to Vaṅgasena (12c A.D.) is also mentioned One Prscription '*Parahitarasa*' is described as prepared by Bhāskara who may be the father of Soḍhala of 12c. A.D The prescription Vaiśvānarapoṭalirasa is mentioned as revealed by Bhairvānandayogī and prepared by the king Siṅghaṇa who ruled at Devagiri from 1200 to 1247 A.D. Opium, vijayā, gauripāṣāna and some other drugs which were introduced during this period also occur in RRS. There are regional words like petārī, gobar, kaṭorī, golī, etc which were popular in 12c A.D. and the tantric works don't follow the rules of grammer and prosody and there are some mistakes of grammer and prosody in it. All these evidences suggest that VB of RRS belonged to 13c A D. i e. around 1250 A.D

Salient Features

VB though compiled the earlier ancient material, added new methods and theories, which was a characteristic feature of cultural revivalism of the Gupta period

The dissection of dead body is mentioned in *Śārīrasthāna* of SS and its importance is also stressed for the knowledge of organs, but it occurs in Śalya instead of Śārīra in *VB* Probably the dissection of dead body was not popular during the period of VB The number of bones is according to *CS* while the types of bones are according to the *SS.*

All the three *dosas — vāta, pitta , kapha* — are of five types. CS gives the names of five types of *ślesmā.* AS also mentioned *āmāśaya* as the seat of *rañjaka pitta.* This is a gradual development of the concepts

AS has made the classification of *ausadha* (medicine) based on different views such as origin, action, purpose etc Substances obbained from sea as well as precious stones and metals are described more elaborately. VB like CS and SS stresses the importance of *tribal men* for the knowledge of medicinal herbs This clearly shows that the Āyurvedic scholars were dependant on the persons living in/or in the vicinity of

forests for the identification of herbs and there was no scientific description of plants which later led to controversies with regard to several herbs. The classics differ on the concept of *Vipāka, CS* accepts three *vipākas — madhura, amla* and *katu*-while *SS* mentions two *vipākas guru* and *lighu,* with references to the views *yathārasavipāka (vipāka similar to rasa)* and anavasthita *vipāka* (unstable *vipāka*) VB refuted the yathārasavipāka and supported the three *vipākas* as agreed to by CS[20].

Among the several acts described under daily regimen, the influence of Vedic and religious scriptures is clearly seen. Several rites recommended in *Atharvapariśiṣṭa* appear in *AS.* They also find place in works of Varāhamihira and suggest that VB was antecendent to or a contemporary of Varāhamihira. VB mentions the chewing of betel leaves in the morning and describes the leaves comparing them with the cheeks of Śaka women. VB was himself probably a person fond of chewing *tāmbūlī* (betal) leaves. VB mentioned *ṛtusandhi* (transition period of seasons) which comprises the last week of the previous season and the first week of the next season. The seasons are also described as of three types based on the months (calander), ecliptic, and the characterics of the respective seasons. Under the description of prepared foods, VB added *dakalāvaṇika, ghārikā* and *indarikā which may be his original additions.* Inḍarikā may be the South Indian dish Idli, P.V Sharma views. Surgery in those days was developed as a part of military expenditions VB states that the camp of the accompanying surgeon/physician should be separate havinga special flag[21] SS describes twenty surgical instruments while VB enumerated twenty six. Surgical practices are twelve according to AS whereas they are eight according to *SS* Operative treatment was to be employed only after making trials of medical treatment. Before operation the patient was to be given food and drinks to reduce the feeling of pain. SS devoted twenty six chapters in uttaratantra for *śālākya* (treatment diseases above the clavicle) but VB devoted three chapters in *sūtrasthāna* in giving the preparations of medicines for *Śālākya* and eighteen chapters in *uttarasthāna.* Disease of eye are 94 according to VB, whereas SS mentions only 73

Among the rites to be performed to the newly bron child, *rakṣākarma* (protective or propitiatory rite) is mentioned Apart from the Atharvanic rites, as mentioned in *CS,* VB adds the rites pertaining to *Māyūrī, Mahāmāyūrī* and other Buddhist rites Labour room and *kumārāgara* are also described Wearing of *mani* (precious stones) on hands, neck and head, which are Atharvanic in nature are also found in *AS* Pumsavana rite is described with several prescriptions and in the end VB recommends to perform all which are used to be done by brāhmanas and elders Attractive description of playground for children is also given Seasonal regimen for children is narrated Importance is given to the time of appearance of teeth which is said to be the source of all disease At the time of appearance of teeth in children and of feathers in the peacocks there is no part of the body which does not ache.

In the treatment of poisons, two medicines are mentioned as given by Kautilya In the end of treatment of poison, the therapeutic uses of poisons are also mentioned and it is stated that a person who takes poison will not be affected by any poison or untimely death or evil effects of planets In Rasayana, VB has given importance to

Kuṭīprāveśika. **Among the metals iron, copper, sılver and gold are recommended. In the end, VB mentions that if nutritious food with substances like ghee and milk is given the result of *Rasayana* (rejuvenation) is obtained without *kuṭīpraveśa* In this context, the word *Goṣṭha* (Cowpen) is used which ıs beautifully descrıbed by Varāhamihira and Bhāravi giving a glimpse of the rural Indian culture of the perıod. Under *Vājīkaraṇa* (aphrodisıacs), VB has ıncluded several new prescrıptions including oıntment for the feet. Such prescrıptıons are found ın *Nāvanītaka* also The 64 arts mentioned ın *Kāmasūtra* are cited suggesting the influence of Vātsyāyana's *Kāmasūtra* over VB. Evidently VB was also popular like the *Kāmasūtra* durıng Gupta perıod**

Suśruta mentıons that the protectıon of the kıng should be looked after by a *physicıan* who is expert ın *Rasa* and by a *purohıta* (*prıest*) who ıs expert ın *mantra* (charms)[22]. PV Sharma opınes that '*Rasa*' should be taken here to mean 'poıson' sınce this word was used to ındıcate poıson ın the early perıod Durıng the perıod of VB the use of poıson ın the treatment of dıfferent dıseases became more popular P V. Sharma has given a comparatıve extent of *AS* and *AH* of all the sthānas The subȷect ın *Sūtrasthāna and Śārırasthāna* ıs reduced by 25% and 50% respectıvely whıle *Nidānasthāna* remaıned same There ıs 50% increase ın *Cıkıtsā, Kalpa* and *Uttarasthāna*. Thıs shows the natural and gradual change where the theorıtıcal part lost ıts importance and the practıcal aspect of treatment and preparatıon and applıcatıon of medıcınes gained ımportance. Thıs development stıll contınued further ın the succeedıng centurıes when we fınd lack of new works dealıng wıth the theorıtıcal aspect In the fırst verse ın AS, the author pays obeısance to Buddha whıle ın AH says, '*Apūrva Vaıdya*' whıch led to dıfferent ınterpretatıon by dıfferent commentators Sitaram Ranganath Joshı refers to a tradıtıonal legend to emphasıse the greatness of VB in the field of Āyurveda Lord Dhanvantarı once thought to know the state of health of people ın Indıa and also the state of physıcıans whether they were competent to cure the dıseases and maıntaın the health of the people He took the form of a bırd and wandered to the houses of well known physıcıans and asked "*Ko'ruk? Ko'ruk? Ko'ruk*" (who ıs dısease-free?) but could not get any reply from the physıcıans The bırd came to Sındhu regıon and there to Vagbhata's house also and repeated the same questıon three tımes The bırd repeated "Ko'ruk? Ko'ruk? Ko'ruk? Then VB replıed *hıtabhuk* (one who eats wholesome food), *mıtabhuk* (one who eats requıred quantıty) ı e does not over-eat), *aśākabhuk* (one who doesn't eat (leafy) vegetables) There are also some popular sayıngs that VB ıs the best physıcıans ın *Kalıyuga* and hıs work ıs the best on the (subȷect of) *Sūtrasthāna*.

References

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3 D C Bhattacharya , *Date and works of Vāgbhaṭa the Physıcıan* A B O R I , Vol XXIII, 112-127
4 P V Sharma, *Vāgbhaṭa-vıvecana,* p 308
5 *AH. U* 40 79-80
6 Claus Vogel; AH , ınt

7. Jolly; *Indian Medıcıne,* p. 10
8. H Hilgenberg and Kirel, *AH., INT.*
9. *AH. CI.* 19.98
10. Ibid. *U.* 5.50
11. Mahāvagga, 1.6.17
12 Jyotışachandra Sarasvatı; *A H* , ınt.
13. Gurupada Haldar. *Vṛddhatrayī,* pp. 44-45, 292-293
14. G.N. Mukhopadhyay: *HIM, III,* 790-809
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16. G.J. Meulenbeld *The Mādhavanıdāna And Its Chıef Commentary,* pp. 423-425
17. Hari Shastri Paradkar: *AH.,* ınt.
18. The work ıs now published (ed R E. Emmerıck, Weısbaden)
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20. AS.SU. 17.17-20
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22. *SS. SU.* 34.7

9.2

OTHER COMPENDIA OF BHELA, KĀŚYAPA AND HĀRĪTA

P.V. SHARMA

Bhela

Bhela (or *Bheḍa*) is mentioned as one of the six disciples of Punarvasu Ātreya. His name comes after Agniveśa[1]. At the time of Vāgbhaṭa, it was found in original (*ārṣa*) form in comparison to the treatises of Agniveśa and Suśruta which had passed through the process of revision and annotation as appears from the statement of Vāgbhaṭa himself.[2] Even if it was redacted, the Saṃhitā retained its name of his author. Nevertheless, it is clear by the same statement that during Vāgbhaṭa's period *Bhelasaṃhitā* became almost obsolete in face of the compendia of Caraka and Suśruta. Even earlier it might not have been popularised in competition with the *Agniveśa-tantra* which was deemed as the first and the topmost among the contemporary treatises.

Bhela is often quoted by authors and commentators[3] which shows its authoritative nature and the respect which it commanded in academic circle. However, most of these quoted elsewhere are not found in the presently available text of *BS* which raises doubt about its originality and authenticity. For instance, KS (SI. 1) quotes a view of Bhela that Vasti should be applied in children from six years of age but this statement is not available in the extant *BS*.

BS was first published by Calcutta University based on transcribed copy of the ms in Telugu character preserved in the Tanjore Saraswati Mahal Library (Burnell's Catalogue, p. 63 No. 10773). This is dated about 1650 A D. Another edition based on the same source material, edited by Girija Dayalu Shukla and published by Chowkhamba Vidya Bhawan, Varanasi came out in 1959. The third and the latest edition has been brought forth by C.C.R.I M.&.H (New Delhi) in 1977 which claims to have removed the erros of the previous editions as they were based on transcribed copies having a number of mistakes and to have improved upon the textual readings. It is edited by V.S. Venkatasubramania Sastri and C. Raja Rajeswara Śarma. They have illustrated in preface (appendix A-D). With comparative tables how their edition differs from the previous ones and what improvements they have made in the text The textual errors crept in due to errors in the transcribed copy combined with careless editing have also been enlisted.

Even the single *ms.* which is the basis of all the editions is not complete It starts with *Sūtrasthāna, ch. 4* (without beginning) and ends after V. 88 abruptly without

colophon In between also there are several breaks. The present text contains the following sectıons.

1.	*Sūtrasthāna*	4-28 Ch
2.	*Nidānasthāna*	2-8
3.	*Vimānasthāna*	1-8
4.	*Śārīrasthāna*	2-8
5.	*Indnyasthāna*	1-9
6.	*Cikitsāsthāna*	1-30
7.	*Kalpasthāna*	1-9
8.	*Sıddhisthāna*	1-8

It seems that the plan of contents ın *BS* was sımılar to that in *CS* having the same number of *sthānas* and chapters Thus, as regards the number of chapters, only two *sthānas* can be said as complete

Contributions of Bhela

Though Bhela was a colleagues of Agniveśa, he has made a number of contnbutıons not found ın *CS* The followıng are noteworthy

1. The *'ālocaka'* type of *agnı (pitta)* has been mentioned as of two types-one related to optıcal vısıon (*Cakṣurvaıśeṣika*) and the other to mental vision (*Buddhıvaıśeṣıka*) (Sa 4.3-5). Thıs dıvısion of ālocaka is not found ın any other Āyurvedic treatıse Probably thıs ıs essentıally the same as '*Cakṣurbuddhı* ın *CS*. (*SU*. 8 12).

2. Dıfferent names have been gıven to fevers caused in dıfferent living beings. An eruptive fever known as '*Vātālıkā*' has been described (SU. 13.12-19).

3. A novel definıtıon of '*Kāyacıkıtsā*' has been gıven accordıng to which '*kāyacıkıtsā*' deals mainly wıth the treatment of depressed *kāyāgnı* (dıgestive fire or body heat) (Sa 4 18)

4. There ıs a separate chapter on *Viṣama Jvara* (Cı 2) in whıch dıfferent vıews about ıts causation are quoted

5. the descnptıon of *pıttaja kāsa* ıs a peculıar one. It has symptoms of hepatitis such as yellowısh sputum and eyes (Cı 22 9-10)

6 the *Kāyacıkıtsaka* joıns wıth *Bhūtacıkıtsaka* one one hand and wıth *śalyakrt* on the other as cırcumstances demand (Cı 8 31, ch 29, P 227)

7. *Piṇḍītaka* ıs descnbed as of three types-black, whıte and *madana* (Ka. 1.2)

8 The mercenary motıve ıs quıte evıdent where he says that one should earn money even by suppressıng dharma and karma *(SU* 15.5)

Date of Bhela

As said earlier, it is difficult to ascertain the authenticity and originality of the present text The colophons at the end of chapters are not in conformity with those in other samhitās There is definition of 'Buddha' '(Ci 8.7) which shows its composition in Post-Buddha period To carry the Rasāyana herbs seated on elephant in a royal procession (Si 8 33-34, 46-47) reminds of the similar description found in the *Bṛhatsaṃhitā* (of Varahāmihira) (*ch* 42-59) for carrying the wood for Indradhavaja and making idols and in the *AS (SU. 8 91-101) for sarvārthasiddhāñjana* This scene was common in Gupta period There are also tantric facts like Cakra in *hrdaya* (*SU.* 20 4-5), orbits of Soma (Sa 4 11) and Sūrya in nābhi, *satkāya* (Sa 5 8) etc which indicate advanced stage of Tantra

All this shows that the present text could not have been composed before the Post-gupta period. However, the original text may be dated as 1000 B C. because of its author being contemporary of Agniveśa.

Kaśyapa

In the saṃhitā of Kaśyapa, Kaśyapa is the preceptor and Vṛddha Jīvaka disciple who collected all these precepts into the treatise So it is known as *Vrddhajīvakīya tantra,* Later on when it went out of tune with the age and was virtually lost *vātsya,* of the same clan, recovered it from a *yaksa* named '*anāyāsa*' and popularised it after redaction [4]

The present text is based on an imcomplete and broken single ms under possession of Pt Hemaraja Sharma, the Guru of the king of Nepal[5]. He has edited it with a scholarly introduction (Chowkhamba Sanskrit Series Office, Varanasi, 1953).

Another '*Kaśyapaśamhitā' mss* of which are preserved at several libraries is a different work on diagnosis and treatment prescribing mostly the use of mercurial preparations [6]

Kaśpaya is a pediatrician and is different from Kāśyapa, the toxicologist. Both Kaśyapa and Kāśyapa are mentioned separately[7] (In the text of *KS* everywhere Kaśyapa is mentioned as peceptor Somewhere only the epithet *Mārīca'* comes[8]. Thus it can be concluded that Kaśyapa, the son of Marīci, was the preceptor[8a] Vṛddha Kāśyapa, however, is a different person who is mentioned along with other sages in an aseembly presided over by Kaśyapa (Si 3)

Kaśyapa, the pediatrician is quoted in Bower mss [9] and *AH*[10] Kāśyapa in the former means '*samhitā of kaśyapa*

Contents

The arrangement of subject matter in KS is the same as in CS There are eight sections (*sthānas*) and 120 chapters but the order is somewhat modified in one case.

Here *Siddhisthāna* precedes *Kalpasthāna* whereas in CS it follows the same Besides, there is a big *Khilasthāna,* like *uttaratantra,* consisting of eight chapters. Thus *KS* has two hundred chapters in all[11]

The main subject dealt with is *kaumārabhrtya* which is said as the foremost among the eight parts of Āyurveda[12] In other topics, KS mostly follows Caraka and Suśruta. For instance, the number of bones (360), definition of manas, nine *drvyas,* ten *prāṇāyatanas* are according to the former while 107 *marmas,* eight *prakṛtis, āja rasāyana* etc. are according to the latter[13]

Peculiarities and Contributions

1. The notable contributions of Kaśyapa are in the field of pediarics. The chapters on dentition, pain, *leha, phakka, Jātahārini, dhūpakalpa* etc. are quite original.

2. '*Auṣadha*' and '*bheṣaja*' are differentiated technically The former relates to rational treatment while the latter to the treatment with incantation etc.[14]

3. In five basic pharmaceutical forms (*Kaṣāya-kalpanā*), two more cūrna and *abhiṣava*-have added thus making them seven [15]

4. *Sūtikāroga* (puerperal disorders) are said as of 64 types[16]

5. '*Amlapitta*' has been described It is also called as '*śuktaka*[17]

6. It has described '*Trisamā gutika*'. (composed of equal parts of *harītaki, śuṇṭhi* and jaggery This was a popular remedy during gupta and post-gupta period [18]

7. Topics relating to Pharmacology are described in detail[19]

8. Kalpas of single drugs are described in *Kalpasthāna*[20] There is also similar description of drugs useful in eye diseases[21]

9. *Sveda* (sudation) is said as of eight types[22] whereas in *CS* it is of thirteen types

Date

As Kaśyapa, the pediatrician, is quoted in *Bower mss* and *AH,* it must be earlier than that Because of its extensive circulation and popularity, *Bower Mss* must have been composed originally in nearabout the beginning of the Christian era, because they, on paleographic grounds, are of the 4th Cent A D [23] Thus the original text of *KS* seems to have been composed near about 5-6 Cent B C

As regards its redaction by Vātsya, it might have taken place in post-gupta period (6-7 Cent. A.D.) as cultural and other data such as mention of *ṣasthīpūja*[24], hūṇas[25] etc relate to the same.

Hārīta

Hārīta was one of the six disciples of Punarvasu Ātreya and had composed his treatise like that of Agniveśa[26] *Hārīta-samhitā* is quoted by later authors and commentators[27]. which shows its popularity. Vāgbhata in *AS* mentions only three (Agniveśa, Bhela and Hārīta) of the six colleagues[28] which indicates that during that period these three were more popular

The present text does not have the verses quoted elsewhere Moreover, the colophons are *'Hārītottare'* and not *'Hārītasaṃhitā,* (or *Hārītatantra*). Once it is called as *'Vaidyakasarvasva'*[29] These facts confirm the doubt about the originality of the extant text and on the basis of the critical analysis of the internal evidences it proves to be *pseudo-Harita*[30]

The date of the original *Hārīta-samhitā* would be the same as that of Agniveśa e.g. 1000 B C. but the present text because of mentioning Vāgbhaṭa[31] and not mentioning pulse-examination, opium and mercurial preparations may be placed in 10-12 Cent. A.D

REFERENCES

1 *CS* SU 1 31
2 *AH. U* 40 88
3 *KS* Si 1 17-18, Dalhana (*SS SU* 33-19, 39 6-7), Vijayaraksita (*MN.* 2 37-38,) For quotations from Candrata, Arunadatta, Śrīkaṇṭhadatta and Śivadāsa see Mukhopadhyaya. *HIM*. III, 530-534 In P 530 due to textual error, he has read 'bhoja' as 'bheda'.
4 *KS* Ka 12. 18-27
5 Ibid, Int. p 16
6 See V N Durvedi et al *A Report on Neo-Kasyapa Samhita of Varanasi, Sachitra Ayurveda,* July, 1972
7 CS SU 1 8,12
8 *KS Ka* (*Bhojanakalpa* and *Satkalpa*)
8a Also See KS Int P 17
9 Nāvanītaka 2 14 1-30 (*Kāśyapīyā gudikā* used in children diseases)
10 AH U 3 48 (*daśānga dhūpa useful* in *Bālagrahas*)
11 KS *Samhitākalpa* 6-9
12 Ibid Vi 1-10
13 P V Sharma *Āyurveda Kā Vaijñanika itihāsa,* P. 160
14 *KS* Indriya 1. 3-4.
15 *KS* Khila 3
16 Ibid. Khila 11 7-14

17 Ibid Khila. 16
18 Ibid Khila 17.38; also see Itsing. *A record of Buddhist Practices*, P. 134.
19 Ibid Khila, 3
20 Ibid 5, 6,7
21 Ibid Ka. 7
22. Ibid *SU*. 23 25-26.
23 Winternitz HIL, III, P. 667
24. KS CI *bālagraha*, 10-13, cf. *sūtikāgāra* in Bānabhaṭa's H and *Kādambarī*.
25. *Ibid , Revatī-kalpa*
26. *CS*. *SU*. 1.31,33
27. Cakrapāni (*CS SU*, 27,4,114,197,213-216, 231-233, 237,243-46, 338); Vijayaraksita (MN 1 5-6 etc.), Śrīkanthadatta (VM 1 53,62 etc,), Śivadāsa (CD 1.4 5 etc)
28 AS Su. 1.13
29 Colophon at the end of Ch 2 of the *Sūtrasthāna*.
30 P V Sharma, The Pseudo-Hārīta Samhitā, *I.J H.S.*, Vol 10. no 1 , 1975.
31 *Hārītasamhitā, pariśiṣtādhyāya* However, Filliozat attaches importance to this (See *JA*, T 225, 1934, P 127, footnote, Alix Raison, *La Hāritasamhitā*, Pondicherry, 1974)

9.3

NĀVANĪTAKA: THE BOWER MANUSCRIPT

V.N. PANDEY

The Manuscript Discovery

Of the many sources from which the Material for the History of Medicine in India could be gathered the Bower Manuscripts (*Nāvanītaka*) is one It was contained in the relic-chamber of the *Memorial-stupa* built in the honour of Yaśomitra a monk of great repute at the Mind-oi-of-Qum-Turā about thirteen or sixteen miles from Kuchar. It was found when treasure-seekers of Kuchar, dug the Stupa. Kuchar is the name of one of the principal oasis and settlements of the Chinese (Eastern) Turkestan, on the great Caravan route to China.

The manuscript is known by the name of Col H Bower, as it fell into his hands in 1890, being sold by the native treasure-seekers of Kuchar for a small sum, where he had gone on a confidential mission from the Government of India.[1]

Publication

On his return to India, the mauscript was submitted to Col J Waterhouse, the then President of the Asiatic Society of Bengal Later on Dr A F Rudolf Hoernle, deciphered it and spent twenty one years on its study and editing till at last it was published under the name of *The Bower Manuscript* by the Archaeological Survey of India, Calcutta, in the year 1912[2] Kaviraj Balwant Singh Mohan, made it popular among Āyurvedic Physicians, by its critical edition (Devnagari script) published as '*Nāvanītakam*' (or the *Bower manuscript*) from Lahore in the year 1925

Description

Preserved in the Bodleian Library, Oxford, the original manuscript is written in the Gupta-Script on the Birch-bark in the fashion of traditional Indian '*Pothī*' (Loose-leaves) comprising fifty-one existing leaves with broken and lost texts It is enclosed between two wooden-boards with a string running through them The whole manuscript is a collection of seven parts (*Prakaranam*) There are two distinct portions as the leaves of parts I-III, IV, V and VII are larger, that measure about 11½ × 2½ inches while the leaves of smaller portions i e part VI measure about 9 × 2 inches[3]

A Standard Manual of The Foremost Medical Formulae:

The author declares himself that he is going to compile a work by the name '*Nāvanītaka*'. In this, he intended to give 'approved extracts' (i e *Siddha-sankarṣa*)

from old works of the more ancient Medical authorities For containing foremost medical formulae (*Yogamukhya*) this work may alternatively be called by the name of '*Siddha-saṅkarṣa*' also [4]

The word '*Nāvanītakam*' means 'butter' (or cream) and it seems quite appropriate to call the work by this name for its sweet and soft style and for quotations of the best known remedies The same analogy of appropriateness equally applies to the alternative name '*Siddha-saṅkarṣa*' i e. approved extractions for the work contains the foremost formulae of the ancient medical authorities, showing their usefulness that was experienced in the society from the far off days of the great antiquity

Author

Although the name and identity of the author of *Nāvanītaka* is not known, yet it is surmised that his name should be '*Nāvanītakaṃ*' for his work comprised of sixteen chapters only, that are the most important portions i e part II of the Bower manuscript, dealing with medicine[5], yet the entire manuscript bears the name of '*Nāvanītakam*' (*The Bower Manuscript*) as a corollary of it, the name of the author could have been '*navanīta*'

The Vedic and Buddhistic Influence

The Bower manuscript is the collective manuscript of seven parts and it can be divided into three books Part I-III, which deal with medicine, Part IV and V dealing with divination (forecast) by means of dice (i e *Pāsakakevalī*), and Part VI and VII, containing protective charms (incantations) against the snake-bite and other evils by means of *Mahāmāyūrī Vidyā* *Mahāmāyūri* or 'the great *Māyūrī*' is called so, because the peafowl[6] (*Mayūra*) is the traditional enemy of the snake

The *Mahāmāyūri* spell (i e *Mantra*) is the later development inspired by the *Atharvaveda*[7] and the Suśruta's[8] recommendations on the same subject, with only difference that in contrast with the Vedic incantations, the Buddhist iconographic influence is visible there

Mahāmāyūri: Its Continuity In The Post-Vedic And Buddhistic Tradition

The image and worship of *Yaksa* is the Post-Vedic event and it survived in the works of Buddhism too The 'Pañca-raksā' is the work of great repute among the Buddhists This charm was rendered with six translations in Chinese — three of them based on primitive recension of the charm and the other three on the expanded recension While the former was translated by a monk of Kuchar (*Kucha-Bhiksu*) viz '*Poh-Śrīmitra*' under the Tsin dynasty in 317-420 A D and by Kumārajiva later on in the 4th cent A.D and the latter between the 6th cent A D and 8th cent A D, thus showing that in its primitive form that charm was well known to the monks of Kuchar during the 4th cent A D [9]

In his preface (*Upodhāta*) to *Kāśyapa-saṃhitā*, Pt Hemarāja Śarmā indicates the name of '*Anāyāsa Yakṣa*' of Kauśambī who is mentioned in the *Pañcarakṣā*, to bestow bliss on those who offer worship to him with that charm He corroborates it with an old book according to which 'the lost' *Āryamahāmāyūrī Vidyā*' was revived by having come out of the mouth of Yaksa [10]

Part VI and VII containing the text of the above charm in the *Bower Mss* resemble with the primitive recension of the Pañcaraksā collection as the former narrates the story of that charm, and the latter relates to the story of obtainment of that charm by the Buddha/Ānanda [11] In the later course, the *Mahāmāyūri Vidyā* got great popularity in the society as its references are found in the works of '*Aśvaghosa*'[12] who is identified as the poet in the court of celebrated King Kaniṣka (1st cent. A D). It has also mentioned in the works of 'Vāgbhata'[13] (6th cent. A.D) and Bānabhaṭta[14] (7th cent. A D.).

The Compendium — Character

The compendium (*Saṃhitā*) is called so because there exists in it an unmistakable flavour of the older material with the same ideas and thoughts as were expounded by Ātreya and Kāśīrāja (Dhanvantari) etc. Of the six pupils of Ātreya, whose names are Agniveśa, Bhela, Jatūkarṇa, Parāśara, Hārīta and Ksārapāni, who all committed their Master's teachings into writings, works of Agniveśa and Bhela are extant at present. The former exists as *Caraka-samhitā*, redacted by Caraka and later on by Dṛdhabala; in the field of General Medicine i e Kāyacikitsā.[15]

In the field of Surgery i e Śalya, the *Suśruta-samhitā* (redacted by Nāgārjuna and Candrata) is the only extant work of Suśruta He is one of the twelve pupils of Kāsirāja Divodāsa Dhanvantari Others, who all wrote their works (i e *Saṃhitā*) are. *Aupandhenava, Vaitarana; Aurabhra, Pauskalāvata, Karavīrya; Gopurarakista; Nimi, Kāṅkāyana, Gārgya, Gālava* and *Gautama* [16] Besides, there is the *Kāśyapasaṃhitā* available in frgaments in the field of Paediatrics and Gynaecology i e *Kaumārabhrtya* which is the work of Vrddhajīvaka, the pupil of Kaśyapa and radacted by Vātsya, later on [17]

As to the Nāvanītaka, it contains, in the beginning i e Part-I, Verse 1-13, the picturesque view of the method of practical education for the sake of enlarging knowledge of the medicinal herbs and plants through discussions held between the pupil and preceptor by enjoying tours and travels in places like the Himālayas Thus, as assembly comprising of Ātreya, and Kāśirāja accompanying Hārīta, Parāśara, Bhela, Garga, Śambabya, Suśruta, Vasistha, Karāla and Kāpya takes place on the Himalayas wherein Suśruta asks Kāśirāja about the taste (*Rasa*), property (*Guṇa*) power (*Vīrya*), form (*Ākṛti*) names (*Nāma*) and utility (*Upayoga*) in case of garlic (*Laśuna*)

It would seem to have had reason based upon this that Vāgbhata identifies the best species of garlic which either grows on the Himalayas or in the country of the śakas, probably, pertaining to Central Asia [18]

Curiously, indeed, both in Nāvanītaka and in the works of Vāgbhata, the story of the first origin of garlic is related upon the basis of 'Nectar-churning' i.e '*Amṛta-manthana*', thus showing its origin from the nectar (*Amṛta*). The relation of nectar is identical in '*Kaśyapa-samhitā,*' too, with only difference that in the former case its origin takes place from the drops that fell down from the head of '*Rāhu*' (*Asurendra*)[19] having been cut-off by Visnu (Janārdana) while in the latter case it originates from the drops of nectar that fell down from the mouth of Śacī, the spouse of Indra [20]

Thus having been communicated by Kāśirāja, i e Sage King of 'Kāśī' to Suśruta, the subject of the '*Laśunakalpa*' or small pharmacographic tract on garlic commences in part I, rather in a style often found in compendium (*Samhitā*) as referred to above

The part II, commences with remarks on the importance of regulating digestion (VV, 44-51) and with some pharmaceutic directions (VV 55-59), such as are usually found in the so called 'Sūtrasthāna', or section on the fundamental principles of medicine Besides, there are some interspersed alternative and aphrodisiac formulae (VV 52-54, 60, 61, 67) belonging to Rasāyana and Vājikarana And next comes section on the formulae for various eye lotions, viz *Āscyotana,* (VV 68-86), Collyria, viz. *Añjana/Vidālaka* and remedies for the hair, viz *Keśa-rañjana* (VV 121-124) survives with the fragmentary fourteenth Chapter dealing with children's diseases These missing chapters XV and XVI dealing with women's diseases comprise the Kaumārabhṛtyam pertaining to *Strīroga.*

Although in fragmentary form, part III is an antique evidence of what was, or was intended to be, a larger work of an ancient formulary or manual of prescriptions comprising of *Yogasangraha* for the use of the practitioners of that time The fragmentary parts IV & V are specimens of the chapters dealing with diagnosis and prognosis that are included in the *Nidānasthāna* while chapters VI and VII deal with the subject of Toxicology or the *Agadatantra*[21]

It is a noteworthy point that in Part-II (verse No 92, 93, 106 and 108) the doctrine of a tetrad of humours or '*dosas*' viz *Vāta* (wind), *Pitta* (bile), *Kapha* (phlegm) and *Rakta* (Blood) is clearly implied corresponding to the passages of *Susruta-samhitā,*[22] while the usual principle of the triad of homours (*Dosa-traya*) viz *Vata, Pitta,* and *Kapha* are also indicated in the introductory Verse No 15 corresponding to the passages of *Caraka-samhitā* [23]

Standard and Floating Medical Traditions

By succession of time all the works of the Pupil of Ātreya, Kāśirāja and Kaśyapa got popularity in the society and became 'standard' sources for the later works in which their passages were quoted freely without mentioning their names, assuming that the readers would at once recognise the standard works referred to The same practice is followed in Nāvanītaka which quotes twenty nine and fiteen formulae from Carakasamhitā and Bhelasamhitā respectively Six formulae from Sūsrutasamhitā are

quoted. From the extinct works of the pupils of the above authorities, additional formulae are also quoted [24]

Still, in case of formulae, their authors have been metioned This is a clear indication of their being from the 'Floating Medical Tradition' — it was considered to name authorities for their recommendations, as these names acquired a very archaic appearance, too

Thus, one formule is quoted from each· (i) *Kāṅkāyana* (ii) *Suprabha* (iii) *Nimi* (iv) *Uśanas* (v) *Vāḍvali* (vi) *Bṛhaspati*. Two formulae are quoted from each — (vii) Agastya (viii) Dhanvantari (ix) Jīvaka A whole series of formulae are referred to· (x) Kāśyapa [25]

The formulae No IX and X are attributed to Jīvaka and Kāśyapa in *Nāvanītaka,* in cases of children disease These formulae apparently indicate them to be their 'ipsissima verba', saying '*Iti hovāca Jīvakaḥ*'[26] and '*iti bhāsati Jīvakaḥ*'[27] i.e thus it spoke Jīvaka and '*Kāsyapasya vaco yathā*'[28] i e. according to Kāśyapa Besides, six formulae have been attributed to Ātreya[29] while the '*Laśunādyam ghṛtam*'[30] is attributed to Aśvins who are invoked in the hymns of the Rgveda [31]

The Antique Autograph

The *Bower ms* is not the author's autograph, rather it is the copy of some intermediate copy of that autograph It is evident that three dots[32] in Part II Chapter I, Verse 45 indicate the three missing syllables, which the scribe was unable to read in his original, but which now can be read as '*Pañca ca*' from the *Bheda-saṃhitā,* one of the sources of the *Nāvanītaka* [33]

Part II, Chapter II, Verse 9 contains the curiously blundered phrase '*Yāvad-daśa-varsas*'[34] instead of '*Yāvad-avakarsas*' which leads us to one conclusion that there must have been a defective original, other than the author's autograph, before a subsequent copyist of the manuscript, due to which dots and the blundered phrases were transferred, in its body On the other hand, this fact suggests the great antiquity of the author's autograph 'There must have been some interval between the writing of the autograph and the copying of the existing manuscript' — says Hoernle who refers only to its intermediate copy

Manuscript Written By Four Scribes

According to Hoernle, the intervals between the writing of the autograph and the copying of the manuscript should not have been of inconsiderable duration because the *Bower manuscript* is the production of four distinct scribes who wrote Part I-III, Part IV, Part V and VII and Part VI respectively They are almost contemporary writers The scribe who wrote the second protion, i e Part VI commenced his writing on the Verso of last leaf of the first portion (Part I-III), while the scribe who wrote the third portion i e Part V and VII appended a remark on either of the two other portions This proves

that the first portion is earlier in copying date than Part IV and also that, to the writer of parts V and VII, both Part IV and Parts I-III were accessible.

As to the fourth portion (Part VI), it is written for the benefit of the monk 'Yaśomitra' as the beneficiary of Part VII.

Work of One Generation

From the co-ordination of these facts, it follows that the production of these four portions of the *Bower manuscripts* must be compassed by the space of about one generation.[35]

As the writers make use of the 'new form' of the letter '*Y*' (Devanagari '*YA*') and 'from the sketch of the chronology of the origin and spread of this letter in Gupta-script, the time of writing of the Bower manuscript is determined in the second half of the 4th cent. A.D. i.e. about 350-375 A.D., and it is possible that it should be sought nearer the beginning rather than the end of that period. 'Thus, Hoernle supplies us the lower limit of the date of the *Nāvanītaka,* which in view of necessary interval between the intermediate copy and the manuscript my be placed in the beginning of the 4th cent or about 300 A.D.[36]

Nāvanītaka Follows Kaśyapa-Saṃhitā

The *Kaśyapasaṃhitā* i.e. Vrddhajīvakīyatantra, redacted by Vātsya, contains chapters on 'Small Pharmacographic tract' or *'Kalpa'* in its '*Kalpasthāna*' As '*Laśunakalpa*' i.e. medical preparations of *Laśuna*[37] followed by *Śatapuspa* -[38] and *Śatāvarī*[39] etc. The *Kalpasthāna* of *Caraka-Saṃhitā* contains '*Kalpas*' of *Madana,*[40] *Trivrt*[41] *Dantī*[42] and *Dravantī*[43] etc with an obvious difference that in former case, the drugs are medicines (*Auṣadha*) and can be used directly for medical purposes but in latter case, they are used indirectly as for purificatory '*Saṃśodhana*' purpose etc

Vātsya, although descended in the family of *Vrddhajīvaka,* had to offer worship to *'anāyāsa'* the *'Yakṣa'* of Kauśāmbī to get as a gift the extinct copy of *'Kaśyapa-saṃhitā* from him for the redaction work [44] Vātsya must have been the native of Kauśāmbī, the capital of Vatsadeśa where Udayana's reign in 5th cent B C continued from the time of his forefathers as recorded in the works of Bhāsa (4-2 cent B C) [45]

Kaśyapasaṃhitā has plenty of references of its Vedic origin which are spread throughout with the only exception that the word 'Sthavira' of Buddhist discipline is used in the case of *Vṛddhajīvaka,* perhaps to indicate 'the characteristic 'old age' acquired by him.[46] Though the existence of Jainism can not be denied owing to words like '*Lingini*', *'Śramaṇaka'*, *'Kāṇḍanī, 'Tāpasī'*, *'Cārikā'* and *'Jaṭinī'* etc [47] yet it leads us towards its probable time between 7-6th cent B C The fact that *Kaśyapasaṃhitā* does not follow *Carakasaṃhitā* is referred to above. There started a new trend in the *Kaśyapasaṃhitā* by introducing '*Laśunakalpa*' for the first time

which substitutes the single drug in its *Kalpasthāna* in place of purificatory preparations of *Carakasamhitā*.

As for the *Nāvanītaka*, it commences with '*Laśunakalpa*' in Part I which begins with the sacred particle '*OM*' and in offering solutions to '*Tathāgatas*'[48] thus indicating that it is the Post-Buddhist work that succeeds *Kaśyapasaṃhitā* by incorporating additional formulae in 'Ipsissima verba'[49]

Date of The Nāvanītaka

From the facts set out in the foregoing paragraphs, it is very clear that in making his compilation the author of Nāvanītaka, utilised a number of standard sources, most common among them, are the compendia of Caraka, Suśruta, Bheḍa (Bhela) and Kaśyapa It is from these sources that the estimate of the approximate time of composing the Nāvanītaka can be determined even though the colophon of the manuscript is missing

The negative evidence of any reference to Caraka by his name, but incorporating twenty nine formulae from Caraka-saṃhitā[50] and at least fifteen formulae from *Bhela-saṃhitā*,[51] and six formulae from the authority of Ātreya, one of them quoted in the Ipsissima verba of Ātreya[52] in Nāvanītaka, leads us to one conclusion that by that time Caraka had not been popular as annotator of the *Agniveśatantra* which went as usual in the names of Ātreya and his pupil Agniveśa Thus, it follows that the author of Nāvanitaka utilised the work assigned to Agniveśa (1000 B C) not long after Caraka revised it.[53]

Absence of any reference in *Nāvanītaka* to (by name of) Nāgārjuna leads us but to one conclusion that the author of *Nāvanītaka* utilised the work of Suśruta before it was redacted by Nāgārjuna (5th cent A D) For in the commentary of Ḍalhaṇa, the name of Nāgārjuna has been identified with the redactor of *Susruta-saṃhitā*,[54] who added to the earlier portion of it, the *Uttara-Tantra* or 'Later Treatise'

The important point with regard to six formulae quoted from *Suśruta-saṃhitā* in the *Nāvanītaka*,[55] is that three out of them dealing with diarrhoea (*Atisāra Yoga*)[56] which also occur in the *Uttara-tantra* of Suśruta[57] are not directly quoted from the work of Suśruta, but intermediately through the *Bheḍa-samhitā*[58] 'For in the latter and in the *Nāvanītaka* the text of these diarrhoea formulae is identical, while their common text differs from the Suśruta's text in such a manner as to show that the latter is their common source' says — Hoernle.[59] It means that *Bheḍa-samhitā* is one of the sources of the *Uttaratantra*.[60]

The best accountable evidence in support of the above statement would seem to have been the style in which the *Laśunakalpa* or tract on garlic is communicated to Suśruta by Kāśirāja in *Nāvanitaka*[61] The latter in all probability is identical with 'Divodāsa Dhanvantari' while the former refers to the 'Suśruta the Elder' the celebrated writer of *Suśruta-samhitā*[62]

Additional evidence in *Nāvanītaka* —

1 The '*Āśvina Rasāyana*' formula[63] communicated by Aśvins to the great ascetic sage 'Viśvāmitra' the reputed father of Suśruta, who is indicated in *Suśruta-samhitā* and in the *Mahābharāta* [64] It is an unmistakable reference to Suśruta, the elder

2 The *Āśvina Rakapittayoga*[65] taught by Aśvins to Indra, having its origin from Brahmā, the Creator, corroborates the story of the origin of Āyurveda on the one hand and Ātreya's teaching on the other hand It is suggestive of Ātreya's contemporaneity

3 The 'Pippalī-Vardhamāna *Rasāyana yoga*[66] — while in longer version this formula is ascribed to Aśvins and does not appear in any medical work, except the *Nāvanītaka,*[67] the simplified formula[68] occurs in *Caraka-saṃhitā,*[69] based on *Agniveśtantra* embodying teachings of Ātreya

4. The formulae referred to.—

(i) *Kānkāyana* (ii) *Nimi* (iii) Suprabha (iv) *Uśanas* (v) *Vādvali* (vi) *Bṛhaspati* (vii) *Agastya* (viii) *Dhanvantari* (ix) *Jīvaka and* (x) *Kaśyapa.* belong to semi-mythical and prehistorical personages None of these formulae with one exception can be traced elsewhere [70] The single exception is due to Jīvaka's* one[71] of the two[72] formulae which is quoted by Vaṅgasena (1210 A D) with two variants and without naming its author [73]

However, Hoernle holds the opinion that according to Mahāvagga tradition [74] the above formulae attributed to Jīvaka, refer to the historical personage of Jīvaka whom, the tradition assigns to the court of Ajatasatru, in the 6th cent B C , and makes him contemporary and friend of Buddha [75]

According to the other recension of that tradition, he studied medicine in Taksaśilā under the famous physician 'Ātreya' and as the Court — Physician of King Bimbisara, performed many wonderful cures even in the field of surgery with distinction upon head-surgery and other surgical operations, but none with reference to children, except his title of which primarily meant 'nourished by prince' This, according to Hoernle, is apparently supported by the above formulae which present themselves as giving ipsissima verba of Jīvaka [76]

'*Komārabhacca*' in view of the etymology of the title of Jīvaka given in the Mahāvaga and Tibetan Tales, means 'Maintained by the Prince (Abhaya)' (i e *Kumara* = Prince, *Bhacca* = Maintained) [77]

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* Kaśyapa is also a historical figure Apart from being the source of the *Kaśpaypasamhitā*, one Kāśyapa is also quote as Toxicologist (ed)

Jīvaka referred anonymously as '*Vṛddha Jīvaka*' or '*Jīvaka* the Elder' ın above formulae ıs identfied as the son of the sage 'Ṛcīka' He probably studıed at 'kanakhala' under 'Kaśyapa'[78] Thus Jīvaka mentıoned ın *Nāvanītaka* mıght have flourıshed before as contemporary of Buddha He wrote hıs work '*Vṛddha-Jīvakīyatantra*' (7-6th cent. B.C.) as redacted from the Samhıtā of Kaśyapa. They both are quoted ın ipsissıma verba ın *Nāvanītaka.*

Other ımportant poınts ın support of the early date of Nāvanītaka are —

a) The formulae quote from the source of *Suprabha,* who is not known as a physıcıan outsıde the Nāvanītaka,

b) Vāḍvalı finds mentıon ın Kalyānakāraka (8th cent A D.) and a patronymıc Vādvalı ıs mentıoned by Pānını (7th cent. B.C.)

c) The name of *Nımı* ıs ıdentıcal wıth the founder of opthalmic scıences and the epıc ruler of Vıdeha,

d) Dhanvantarı ıs the semı-dıvıne founder of surgıcal scıence.

e) Uśanas and Brhaspatı appear to be hıstorıcal personages, beıng founders of Ausanasa and Bārhaspatya schools, respectıvely whıch flourıshed ın the 4th cent B.C [79]

Thus, to fix the upper lımıt for the probable date of wrıtıng the *Nāvanītaka,* the date of (a) Kāśırāja-Dıvodāsa and Suśruta fallıng between 1500-1000 B C.[80] due to reference of the former ın the Rksarvānukramanī (Sūtra 52) and Kauṣītakī-Brāhmana (26/5) has to be consıdered The date of Suśruta must be the same as he studıed under the former (b) Ātreya, Agnıveśa and Bhela (Bheda) are contemporary wıth the *Upanısad* ı e 1000 B C.[81] as *Brhadāranyaka* and *Kausītakī-Brāhmana* (4/1) quote Agnıvesa and mentıon the '*Pāñcāla*' as the teachıng place of Ātreya [82] The same must be the date of Bhela who studıed under Ātreya[83] (c) Quotatıons ın ıpsıssıma-verba of Kaśyapa[84] and Jıvaka[85] contaıned ın Nāvanītaka prove that they are borrowed from *Kaśyapa-samhıtā's Khılasthāna* (chap XVII & XVIII) the date of whıch ıs bracketed between 7-6th cent B C

Turnıng to the lower lımıt, so much ıs certaın from the precedıng passages, that the date of wrıtıng the exıstıng manuscrıpt from the ıntermedıate copy of the autograph of Nāvanītaka may be placed provısıonally ın the begınnıng of the 4th cent or about 300 A D

As ıdentıfcally the same passages occur ın Nāvaṇītaka[86] and ın works of Vāgbhata[87] I (500 A D)[88] on the subject of applıcatıon of 'plaster to the feet' or 'Pādalepa' for renderıng a man potent The above cıted evıdence gets addıtıonal affırmatıon to fıx the lower lımıt

The date of *Nāvanītaka* is apparently bound up with the date of Caraka as both seem to be contemporary to each other due to absence of any reference to Caraka by the author of *Nāvanītaka.*

It is evident that Caraka must have belonged to that period of Indian History when Buddhism was on the wane and Vedic tradition was again on the rise. This period may be marked as the sheet-anchor of the decline and end of the 'Mauryan' empire alongwith its patron religion 'Buddhism' and beginning of the 'Śuṅga' Dynasty with re-establishment of old Vedic religion in the 2nd cent B C

The above date has been determined from the 'Source' point of view The same can be verified from the 'Language' point of view too

The ungrammatical Sanskrit, or what has been called '*Prākrta*' is a mixture of literary and popular Sanskrit and this popular element is far more conspicuous in the treatises on divination and incantation, in Part IV-VII, than in the more scientific treatise on Medicine, in Parts-I-III

Hoernle is of opinion that this circumstance would have taken place with the rise of '*Mahāyana*' school of Buddhism in the reign of Kaniska in the 1st cent A D. But this opinion does not hold good in view of argument made above according to which the same practice could have taken place within the 2nd cent B C. with the rise of Brāhmanic school.

In conclusion, the production of Bower mass is the event of the 2nd cent B.C which must have been written as a 'Hand Book (Manual) of Prescriptions (Formulae)' for the use of Hospitals established during and after the reign of Aśoka

Later on, its popularity as standard manual had been the cause of its transportation to Central Asia probably in the reign of Kaniska (1st cent A D) Kaniska built Stupas like Aśoka [89] Attached with hospitals, following the pattern of Aśoka, such *Stupa* might have been built by Kaniska at ming-oi-of-Qum-Tura at Kuchar.

The name of 'Yasamitra' (i e. Yaśomitra) occurs in the end in Parts VI and VII [90] According to the Japanese scholar Dr K Watanable, it indicates the ancient Japanese and Chinese custom, that a 'Votary must recite his name.[91] A monk of acknowledged eminence, Yaśomitra was the ultimate owner of the Manuscript He either wrote the manuscript himself or caused it to be written for himself

References

1 *Bo mss* p. XIII
2 *The Bower mss* in original is an archaeological Relic.
3 *Bo mss* p. XVIII
4 *Prāk praṇītair maharsīnām yogamukhaih samanvitam*
Vaksyeham siddhasamkarsam namnā vai Nāvanītakam — Nav II. 1/1
5 Ibid II, 1/49 6
6 i e 'Peacock', the other similar bird is the skyhawk (Gaurda) which has been invoked as the traditional enemy of the snake in the *Atharvaveda* (4/6/3)
7 '*Suparnastvā garutmān* visa *prathamamāvayat,*" (4/6/3)
8. i) *Aristām api mantraiśca badhnīyān mantrakovidah* — SS Ka 5/8
ii) '*Devabrahmarsibhihproktā mantrāhsatyatapomayāh Bhavanti nānyathā ksipramvisam hanyuh sudustaram*' Ibid 9
iii) '*Visamtejomayaihmantraihsatyabrahmatapomayaih yathā nivāryate ksipram prayuktairna tathausadhaih*' Ibid 10
9 Nanjio's catalogues of the Chinese Tripitaka, Nos 306-311 see Upodghāta to *Kaśyapa-samhitā*, P 23
10 '*Kauśāmbyām cāpyanāyāsahpañcaraksā, 'ekasmin prācinapustake' Ārya-Mahāmāyūrī Vidyā vinastā yaksamukhāt-pratilabdhāiti*' Ibid- p 23
11 'Anayā Mahāmāyūryā Vidyārājayā Svāti bhiksoh raksām karohi namaste 'ca' yaśomitrāya — Nav Part VI 1
Anayā Ānanda-Mahāmāyūryā Vidyārājayā Tathāgatabhāsitayā Yaśomitrasya raksām karohi — Nav VII 1
Tadyathā Amale Raksa Svāhā - Mūlasarvāstivāda Bhaisajyavāstu
12 '*Yathausadhaih-hastagataih-savidyo-na- daśvate-kaścana*-pannagena ' — S N 5/31
13 '*Māyūrīm-Mahāmāyūrīm-Ārya-Ratna-Katudhārinīm-Cobha-yakālam-Vācayet*' — AS U 1/17
'*Vidyām-pathannupaharet-Balim* ' ibid 4/10
'*Tataścānu-Pathedenām-Kulavidyām-Samāhitah*' — *Ibid 4/12*
'*Mahāvidyām-ca-Māyūrīm-Śucistam-Śrāvayet-Sadā* — ibid 8/34
14 '*Pathyamāna-Mahāmāyūrī-Pravartyaman-grhaśānti-nivartyamana-Bhūtaraksābali-vidhānam* ' — H p 265
15 *CS Su* 1 30-33
16 *SS Su* 1/12 Dalhana
17 See KS Int
18 AS U 49 103 (*Tasya Kandān* Himavacchakadeśajān)
19 i) *Purāmrtam-Pramathitam-Asurendrah-Svayam-Papau, Tasya Ciccheda-Bhagavān-Uttamāngam-Janārdanah-bindavah-Patitāh Bhūmau-Ādyam-Tasyeha-Janma-Tu* — Nav 1, 10-11
ii) *Rāhoramrta-Cauryena-Lūnād-ye-Patita-galat, Amrtasya-Kanah-Bhūmau-Te-Rasonatvam-Āgatāh* — *As* U 49/161-162
20 *Amrtasya Ca Sāratvat Udgara bahuputrā bhavisyasi*- KS Laśunakalpa, 9-10
21 Bo mss pp LXXXVI-LXXXVIII

22. '*Narte-dehah-kaphād-astı-na-pıttān- na- ca mārutāt, Śonıtād- apı- vā- nıtyam- deha- etaıstu- dhāryate*' — *SS Su* 21/4
23. '*Dosāh — punastrayo-vāta- pıtta- ślesmānah*' - *CS* VI 1/5
24. Bo mss pp LVIII
25 Ibıd
Ibıd pp LVIII — LXIII
26 Nav II, 14,73
27 Ibıd II, 14,91
28 Ibıd II, 14,10,12,17 etc
29 *Bo mss* pp LXII-LXIII
30 ı e Garlıc clarıfıed butter Nav II, 2/109-115
31. *Ṛgveda* 1/112, 116,117,118,119,180 and 181 and 10/39, 40 etc
32 Śrngavera-Pale dve phalānı ca' — Ibıd
33 Journal of Royal Asıatıc Socıety, 1909, p 858
34 '*Evam etannaraḥ Yāvad daśa varṣas*', also see *Bo mss p* LVII
35 Ibıd ch V p XLVIII
36 Ibıd p XLVII
37 Allıum satıvam Lınn
38 Anethum sowa Kurz
39 Asparagus recemosus Wılld
40 Randıa dumetorum Lam
41 Operculına turpethum (Lınn), Sılva Manso
42 Balıospermum montanum Muell-Arg
43 Croton tıglıum Lınn
44 '*Vrddhajıvakavamśyen tato vātsyena dhīmatā, Anāyāsam Prasādyātha labdham tantram ıdam Mahat*' — Ibıd Samhıtākalpa 25
45 *Tatah Sah Vatsarājyam ca Prāpya pıtrā Samarpıtam, Kauśāmbyavasthıtah samyak śaśāsodayanah prajāh — Pra yaug* III,I
46 *KS* Revatıkalpa
47 Ibıd
48 Nav Part I-II
49 Ibıd Part II, 14/10-13 and 73,91
50 *Bo mss* pp LVIII-LIX
51 Ibıd
52 '*Ity-āha-Bhagavān-Ātreyah*' ı e 'thus spake the blessed Ātreya' — Nav II, 4 1
53 CS Su 1,30-33
54 '*Pratısamskartā-apıha-Nāgārjuna eva*' — Dalhana (on SS SU 1 1-2)
55 *Bo mss* p LIX
56 Ibıd Nos 1-3 on there *Āmātısārayoga,* and see Nav II 4/4-56-57, and 8-9
57 Su U 40/35, 35b-36a and 46
58 *Bo mss pp* LVIII, & see Nos 6-8 ın the lıst of quotatıons from the *Bheda-samhıtā*
59 Ibıd p LX
60 SS U 1/4-mentıonıng ıts base vız the sıx supreme medıcal authorıtıes or '*Parmarsı*' ı e sıx pupıls of Ātreya, ıncludıng Bheda

61 Nav II, 8-9

62 *SS. Su* 1/2 and '*Tasmāccarake Agniveśah, Suśrute Suśruta eva sūtrānāṃ pranetā*' — *CS Su.* 1/2, Cakra

63 '*Tapyumānam-Viśvāmitram-Aśvinau — Nav.* II 6/58-65

64 SS Ci 2/3 *MBH, Anu IV*

65 '*Aśvinau-Vāsavāya-Yaduktam-Brahmanā* — Nav. II 4/15

66 Nav II. 6/1-22

67 *Bo mss* P. LXV

68 Nav II 6/34-37

69 *CS Ci* 1.3/36-40

70 *Bo mss* P. LXI-LXII

71 Nav II, 14/73

72 Ibid 73 & 91

73 VS XXI, see *Bo.mss.* p LXII.

74 Mahāvagga, ch VIII and Schiefner's Tibeten Tables ch VI

75 *Bo. mss* p. LXXI

76 *Bo. mss* Note 391, p 176.

77 Ibid

78 *KS. Samhitākalpa*

79. *Bo mss* P LXII

80 Winternitz *A History of Indian Literature* Vol I, Part I, p 271

81 Ibid

82 CS Vi 3/

83 CS Su 1/31

84 Nav II, 14/10-13 & 17

85 Nav II 14/73 & 91

86 '*Adhyandā Pādalepah*' — Nav IL 8/23

87 '*Adhyandā Pādalepam*' AS U 50/36

88 Sharma, P V *Āyurveda Kā Vaijñanika Itihāsa,* p 165

89 Buddha Prakash *India and the world,* p 22

90 Nav VI, 6 & VII 3

91 *Journal, Royal Asiatic Society,* 1907, p 263

9.4

MĀDHAVA'S WORKS ON NIDĀNA AND CIKITSĀ

G.J. MEULENBELD

Mādhava was the author of the *Rogaviniścaya*[1], he probably also wrote the *Mādhavacikitsā*[2]

The work called *Rogaviniścaya* by the author himself (1 2)[3], but generally known as the *Mādhavanidāna*[4], is the earliest compendium on the group of five subjects collectively called *nidāna* and consisting of *nidāna* in its restricted sense (aetiology), *pūrvarūpa* (prodromes), *rūpa* (symptomatology), *upaśaya* (therapeutic diagnosis), and *samprāpti* (pathogenesis) The first chapter of the treatise is devoted to the characterization of these five concepts as well as some related ones, while the remaining 68 chapters contain descriptions of the *nidāna, pūrvarūpa, rūpa,* and *samprāpti,* and also sometimes the upadravas (complications) and *ariṣtas* (signs foreboding death), of all the diseases recognized by *Mādhava*

The *Mādhavanidāna* is primarily a compilation drawing upon earlier treatises[5], chiefly the *Carakasaṃhitā,* the *Suśrutasamhitā* and Vāgbhata's *Astāṅgahrdayasamhitā* Sources of minor importance are the *Astāṅgasamgraha*[6] and Ravigupta's *Siddhasāra*[7] As not all the verses can be traced to these five works, Mādhava must have utilized some still unidentified or lost earlier texts, while, moreover, he may have composed parts of his treatise himself Although these other sources are not known by name, Mādhava no doubt made use of unidentified treatises since some verses of the *Mādhavanidāna* derive from texts vaguely referred to as 'another book' by the commentators on the *Caraka-* and *Suśrutasamhitā*[8]

In spite of its compilatory character the *Mādhavanidāna* is an important treatise Verses on *nidāna* — scattered over several sections of the works of Caraka, Suśruta and Vāgbhata — have not only been collected in it, but also selected and arranged so as to form coherent descriptions of diseases In some cases Mādhava failed in organizing his matter carefully, thus making the seams of his patchwork stand out clearly[9]

The majority of the chapters of the *Rogaviniścaya* are made up of verses from more than one source, but exceptions are not infrequent[10] The stanzas chosen by Mādhava not only show variants, but may also be loosely related to the accepted readings of the samhitās of Caraka, Suśruta and Vāgbhata or even consist of alternative readings recorded as such by the commentators[11] Descriptions of disorders occuring in the samhitās in prose appear in a versified from in Mādhava's work[12] Sometimes verses based on prose passages from the *Suśrutasamhitā* are preferred to stanzas on the same subject found in Vāgbhata's works[13] A few chapters may have been written, partially or completely, by Mādhava himself[14], unless they have been taken from an unknown text

A major contribution of Mādhava is the new order in which the diseases were arranged by him A similar attempt had already been made by Ravigupta, but it was Mādhava's scheme that became standard and was adopted by a large number of later authors

The *Rogaviniścaya* is concerned with six out of the eight aṅgas (divisions) of āyurveda, *rasāyana* and *vājīkarana*, being subjects connected with therapy, are not dealt with The six aṅgas represented are kāyacikitsā (chapters 2-19, 22-37, 49-54), *bhūtavidyā* (chapters 20-21), *śalya* (chapters 38-38 and 55), *śālākya* (chapters 56-60), *kaumārabhrtya* (chapters 61-68), and *agadatantra* (chapter 69) The reasons for this particular way of arranging the material are not clear

The creation of this new alignment was facilitated by dividing the book into a rather large number of chapters as compared with the corresponding parts of the samhitās of Caraka, Suśruta and Vāgbhata, which often describe groups of diseases, sometimes rather distantly related, in one single chapter Examples illustrating Mādhava's procedure are the separate chapters on *dāha* (a syndrome characterized by a burning sensation, 19)[15], nādīvrana (fistulas, 45)[16], *upadaṃśa* (affections of the male member, 47)[17], visarpa (erysipelas, 52)[18], *asrgdara* (menorrhagia and metrorrhagia, 61)[19], and *stanaroga* (diseases of the mammary glands, 66)[20] The reverse procedure is also adopted, the Mādhavanidāna contains a small number of new clusters *nidrā* (excessive sleepiness) and *tandrā* (lassitude) occur in the same chapter (17) as *mūrchā* (fainting) and *samnyāsa* (syncope)[21], *ānāha* (obstructive abdominal swelling) is described along with *udāvarta* (a group of disorders arising from restraint of the natural urges, 27)[22]

Mādhava's inventiveness in arranging the disorders also appears from the changed order of the members of groups of disorders in comparison with their order in his sources Examples are found in the chapters on *galaganda* (goitre), etc (38)[23] and netraroga (eye-diseases, 59) The composition of these groups does not always correspond with that found in the works of Caraka, Suśruta and Vāgbhata The author of the *Rogaviniścaya* made his own decisions as to that An example thereof is the group of disorders known as *upadamśa*, which has been enlarged by adding *liṅgavarti*, also called *liṅgārśas* (warts on the penis, 47 6-7)[24] In the chapter on *ksudrarogas* (55)[25] he adopts the order of the *Susrutasamhitā* (*Nidānasthāna* 13), but diminishes their number from 48[26] to 43 by leaving out *visphotaka, pāmā, vicarcī, rakasā*[27], *masūrikā*[28], and *carmakīla*[29] and adding a new item, *śūkaradamstraka*[30] The chapter on *mukharoga* (diseases of the mouth and throat, 56), mainly based on Suśruta, adds the disease *karāla* (56 20) described by Vāgbhata (*AH Uttarasthāna* 21 14cd, AS *Uttarasthāna* 25 18)[31] The chapter on bālaroga (children's diseases) contains descriptions of pārigarbhika (68 10-11)[32] and *mahāpadma* (68 14-15ab)[33] borrowed from the *Astāṅgasamgraha* (*Uttarasthāna* 2 97-98 and 92-93 ab)

Another important and substantial contribution by Mādhava is his description of new diseases absent from earlier works, and the development of some disorders which are only sketchily characterized or not recognized as fully independent diseases by his

predecessors, into independent nosological entities These innovations became highly influential and were almost universally acknowledged by later writers

Two disorders recognized as independent entities for the first time by Mādhava are śūla (piercing, colic-like pain, 26) and *visphoṭa* (diseases in which vesicles or blisters *appear, 53) The Suśrutasamhitā* deals with śūla in its chapter on the treatment of *gulma* (visceral swelling), where it is in the first place regarded as a secondary affection in cases of *gulma* (*Uttaratantra* 42 66cd-69ab) and secondly as an independent disease (*Uttaratantra 42 73cd-88a) Mādhava's* chapter on *śūla*, made up of twenty-two verses which may have been composed by himself, precedes that on *gulma* (28)[34] and does not contain a single statement on a relationship between the two The disease called *visphota* is not absent from the classical *samhitās*, but only cursorily referred to there as forming part of a group of disorders The *Carakasaṃhitā* mentions it in the chapter on *śvayathu* (inflammatory swellings, *Cikitsāsthāna* 12. 90cd), together with *kakṣāh* (herpes zoster) and other skin eruptions, while Suśruta (*Nidānasthāna* 13 18) and Vāgbhata (*AH Uttarasthāna* 31. 9ab = *AS. Uttarasthāna* 36 9) regard it as one of the *ksudrarogas*[35] Mādhava gives the disorder an independent status and devotes a separate chapter to it consisting of eleven verses, which, with one exception, may be of his own making

The new diseases appearing for the first time in the *Mādhavanidāna* are *āmavāta* (25), *parināmaśūla* and *annadravaśūla* (26 15cd-22), *medoroga* (34), *śītapitta* (50), *amlapitta* (51), *masūrikā* (54), *śūkaradamstraka* (55 55), *kuñcana* (59 96), *paksmaśāta* (59 99), and *yonikanda* (63)

The disease called *āmavāta*[36] (often equated with rheumatoid arthritis) is described in a separate chapter of twelve verses which may have been composed by Mādhava The *Hārītasamhitā* (III 21) described it in its own way, independently of Mādhava The disorders called *parināmaśūla* (a type of *śūla* manifesting itself during the digestion of food) and *annadravaśūla* (which may appear during the digestive process or precede or follow it), which are unknown in earlier medical treatises[37], are dealt with in the chapter on śūla as varieties of this disease Medoroga (obesity) is characterized in four verses, which may again be by Mādhava These verses are followed by six ślokas from the *Carakasamhitā* (*Sūtrasthāna* 21 5-9) Mādhava made medoroga into a nosological entity, whereas it was Caraka's aim not to characterize a disease in its own right, but an undesirable condition leading to afflictions of various kinds An illness called *śītapitta* (urticaria), not recorded in the classical samhitās, is described by Mādhava is a short chapter of six verses, the first five of which may be his own, whereas the sixth has been borrowed from Vāgbhata (AH Uttarasthāna 31 32-33ab = AS *Uttarasthāna* 36 30)[38] Three disorders closely related to *śītapitta* according to Mādhava's arrangement, viz , *udarda* (a special form of urticaria), *kotha* (an exanthematous, itching eruption), and *utkotha* (a disorder resembling *kotha*), are dealt with in the same chapter, thus forming a new cluster of Mādhava's making[39] The term *amlapitta* usually denotes a symptom in the classical *samhitās*, not a separately described nosological entity[40] Mādhava regards it as an independent disease (corresponding to a dyspepsia commpanied by vommiting and diarrhoea or spitting of

blood) characterized in a separate chapter of twelve verses, which may be his own The chapter on amlapitta of the *Hārītasaṃhitā* (III 24) has possibly been influenced by the *Mādhavanidāna,* whereas that of the *Kāśyapasamhitā (Khila* 16) appears to be original The chapter on *amlapitta* of the *Rogaviniścaya* ends with a verse on a related disorder, ślesmapitta, but, since the commentators are silent on it, it can safely be assumed that it is a later interpolation[41].

Of great importance is the fact that Mādhava is the earliest author to give a detailed description of *masūrikā* (smallpox, chicken pox and other infectious, eruptive fevers) A disorder of this name is briefly described in a single verse of the chapter on *śvayathu* of the *Carakasaṃhitā (Cikitsāsthāna* 12 93), together with *romāntikā (Cikitsāsthāna* 12 92), related to *masūrika,* whereas Suśruta (*Nidānasthāna* 13 38) and Vāgbhata (*AH Uttarasthāna* 31 8 = AS *Uttarasthāna* 36 8) regard *masūrikā* as one of the *ksudrarogas* The *Kāśyapasamhitā* deals with *masūrikā* in a single verse at the end of the chapter on *visarpa* (Khila 14), while the *Hārītasamhitā* (III 24) considers it to be a variety of contagious *pidakāh* (pustules)[42] The *Mādhavanidāna* has a chapter of thirty-one verses, probably by Mādhava, on *masūrikā* and its various types, including *romāntī*

The disorder called śūkaradamstraka[43] was added by Mādhava to the group of *ksudrarogas* The Mādhavanidāna describes seventy-eight eye-diseases as opposed to the seventy-six of the *Suśrutasaṃhitā* by adding two diseases of the eyelashes, called *kuñcana*[44] and *paksmaśāta*[45] *Śrīkanthadatta* states in his comments that *kuñcana* was borrowed by Mādhava from some other treatise, while *paksmaśāta* is equated by this commentator with the disease called *krcchronmīla*[46] by Vāgbhata (*AH Uttarasthāna 8 3-4 = AS Uttarasthāna* 11 4-5) The short chapter of four verses on *yonikanda* may have been composed by Mādhava This disease, especially prevalent in elder women according to Śrīkanthadatta's comments, probably corresponds to a prolapse of the uterus

A large number of commentaries[47] have been written on the Mādhavanidāna, thus bearing witness to the fame the book has acquired in the course of the centuries

The *Mādhavacikitsā*[48] is the earliest compendium on therapy of Sanskrit medical literature if one disregards a work like the *Yogaśataka,* which consists only of a collection of recipes[49] The text of the edition is divided into 81 chapters Chapters 1-67 are connected with the treatment of the disorders described in the Mādhavanidāna, essentially in the same order The remaining chapters are devoted to *rasāyana* (68), *vājīkarana* (69), *pañcakarman* (70), *sneha* (treatment with fatty substances, 71), *sveda* (sudation, 72), *vamana* (treatment with emetics, 73) *vireka* (purgation, 74), *anuvāsana* and *nirūha* (treatment with clysters, 75-76), *dhūma* (fumigation, 77), *nasya* (errhines, 78), *kavala* and *gandūsa* (gargles and mouthwashes, 79), prescriptions for various disorders as well as weights and measures (80), and *paribhāsā* (technical rules, 81) The same type of arrangement was adopted in many later works such as *Vrnda's* Siddhayoga[50] and Cakrapānidatta's *Cikitsāsamgraha*[51]

The scheme of chapters 1-67 does not fully agree with that of the Mādhavanidāna The Mādhavacikitsā has separate chapters on *pravāhikā* (irritation of the large intestine, including the bacillary dysenteries, 3)[52], *bhūtonmāda* (insanity caused by supernatural beings, 19)[53], *grdhrasī* (sciatica, 22)[54], *plīhan* (splenomegaly; 36)[55], *śophodara* (37)[56], *snāyuka* (dracontiasis, i e , the Guinea worm disease, 53)[57], and *somaroga* (a polyuria occurring in women, 63)[58] One chapter is concerned with the therapy of *visarpa* and *visphota* (52), whereas the Mādhavanidāna devotes two chapters to these diseases[59] One chapter deals with all kinds of *vrana* (ulcers and wounds, 43)[60] The chapters on *kaumārabhrtya* are arranged differently from those in the Nidāna, their order is *strīroga* (61), *pradara* (62), *somaroga* (63), *strīroga* (64), *garbharaksā* (65)[61], whereas the Nidāna has *asrgdara* (= *pradara*), *yonivyāpad* (a composite group comprising menstrual disorders, diseases of the vagina and functional disorders of pyschogenic origin), *yonikanda*, *mūdhagarbha* (disturbances of pregnancy and malposition of the foetus), *sūtikāroga* (puerperal diseases), *stanaroga* (diseases of the breasts), and *stanyadusti* (disorders of the breast milk) The first chapter of the *Mādhavacikitsā* contains prescriptions against pradara, the second is about a variety of diseases, including *yonivyāpad*, *mūdhagarbha* and *stanyadusti* The chapter on *garbharaksā* deals with rules for the preservation of the health of a pregnant woman and her child

The most striking feature with regard to the diseases described in the *Mādhavacikitsā* is the presence of chapters on the treatment of *snāyuka* and *somaroga*, diseases unknown to the author of the *Mādhavanidāna*[62] The disease called *snāyuka* is described for the first time in *Vrnda's* Siddhayoga (55 15-19), somaroga in Vaṅgasena's *Cikitsāsārasamgraha* (70 80-88), two treatises written after the period in which Mādhava lived The view[63] that the *Mādhavanidāna* and *Cikitsā* were written by one and the same author can therefore only be upheld if the chapters on *snāyuka* and *somaroga* are considered to be interpolations of later origin[64] The possibility that these chapters are indeed interpolations is strengthened by the absence of a chapter on *snāyuka* in the manuscript kept at the Bhandarkar Oriental Institute in Poona[65]

The general impression one gets when reading the Mādhavacikitsā is that of a rather early work, prior to the Siddhayoga It shares many verses with it, but is more concise Part of its prescriptions are not found in the *Siddhayoga*[66] or *Cakradatta*

Details pointing to an eary date of composition — prior to that of the Siddhayoga — are the following The chapter or *krmiroga* (diseases caused by parasites, 7) does not yet prescribe the use of pārasīyayavānī (Hyoscyamus niger Linn)[67] and the juice from the leaves of *dhattūra* (Datura species), as in the *Siddhayoga* The tree called ābhā (a species of Acacia) is still unknown[68] Religion and astrology do not figure in the treatment of *masūrikā* and *visa*, unlike in the *Siddhayoga*[69] Many of the more complicated compound formulas of *Siddhayoga* and *Cakradatta* are absent from the *Mādhavacikitsā*[70]

Some noteworthy features of the *Mādhavacikitsā* are a prescription with *kañcata*[71] as one of its ingredients, the presence of prescriptions against (*carma*) *kīla*

ın the chapter on *ksudraroga* (55 25 and 30)[72], and the descrıptıon of a yantra (magıcal square) ın the chapter on *strīroga* (64.29)[73]

Source are not mentıoned ın the *Mādhavacıkıtsā* except once[74], a rather consıderable number of verses have been borrowed from Ravıgupta's *Sıddhasāra*[75]

As ın the *Mādhavanıdāna,* the author's name ıs not mentıoned ın the *Mādhavacıkıtsā,* but the colophon states that ıt ıs by Mādhava, son of Indukara

The questıon what other medıcal treatıses attrıbuted to an author called Mādhava can be assıgned to the autor of the *Rogavınıścaya* and *Mādhavacıkıtsā* remaıns partıally unanswered In an earlıer publıcatıon I ascrıbed a larger number of works to hım than he actually composed[76] Most of the problems concernıng authorshıp have sınce been solved, fırst and foremost thanks to the scholarshıp of P V Sharma[77] Some obscurıtıes remaın, for ıt cannot be ascertaıned whıch Mādhava wrote the works called *Praśnavıdhāna* and *Yogavyākhyā.*

The *Praśnavıdhāna* ıs once, wıthout the author beıng mentıoned, referred to by Vıjayaraksıta (on Nıdāna 1. 14cd-15ab)[78], who calls ıt a *suśrutaślokavārttıka,* ı.e., glosses on the verses of or versıfıed glosses on the *Suśrutasamhıtā* The same work ıs mentıoned twıce by Nıścalakara ın hıs commentary on the *Cakradatta* under the tıtle of *Praśnasahasravıdhāna,* ı e , exposıtıon on the thousand questıons Nıścalakara, unlıke *Vıjayaraksıta,* ınstructs us about the author, Mādhava, and adds that thıs Mādhava was a suśrutavārttıkakāra[79], ı e , an author of glosses on the *Suśrutasamhıtā* That some Mādhavakara wrote a kınd of commentary on the Suśrutasamhıtā ıs confırmed by a statement found ın Vıjayaraksıta's part of the *Madhukośa* (on Nıdāna 7 5d-6), where — ın a passage that refers to a stanza fro the *Suśrutasamhıtā* — *Mādhavakara* ıs saıd to be one of a serıes of authors of explanatory works[80] Morover, Vācaspatı quotes ın hıs *Ātankadarpana* (on Nıdāna 5 31-32) an explanatıon by Mādhava that also occurs ın the *Madhukośa* (on the same verses), where ıt ıs not explıcıtly attrıbuted to Mādhava Thıs explanatıon derıves from a prose commentary on the *Suśrutasamhıtā,* beıng clearly an elucıdatıon of a technıcal term found ın a passage of that treatıse (SS *Sūtrasthāna* 15 15) Corroboratıve evıdence also comes from three references ın Nıścalakara's *Ratnaprabhā* to Mādhava as an author who follows Jejjata ın hıs explanatıons[81] Fınally, ıt ıs stated ın the Ratnaprabhā that an author called Govardhana preferred a comment by Jejjata to that by Mādhava[82]

The evıdence thus collected supports the vıew that an author called Mādhava (kara) wrote a commentary or glosses on the *Suśrutasamhıtā,* a *Suśrutaślokavārttıka,* wıth the tıtle of *Praśna(sahasra)vıdhāna* The uncertaınty about the ıdentıty of thıs author cannot be solved S Dasgupta[83] poınted to the Śrīmadhava who — accordıng to Dalhana ın the ıntroductıon to hıs *Nıbandhasamgraha* — composed a *tıppana* on the *Suśrutasamhıtā* Thıs Śrīmādhava may ındeed be the same as the one who wrote the Praśnavıdhāna In one of hıs books P V Sharma[84] suggested that the author of the *Praśnasahasravıdhāna* may be ıdentıcal wıth Mādhava, son of Indrakara, who composed the *Paryāyaratnamālā.* Evıdence poınted to thıs ıdentıty ıs, however, lackıng

The *Yogavyākhyā* is quoted once as a work by Mādhavakara in Śrīkanthadatta's commentary on the *Siddhayoga*[85] and twice as written by Mādhava in Niścalakara's *Ratnaprabhā* on the *Cakradatta*[86] Judging from Śrīkantha's quotation, this work appears to have been a treatise on medicinal compounds Evidence concerning the identity of this Mādhava(kara) is not available

The author The *Rogaviniścaya* and *Mādhavacikitsā* are completely silent as to their author He is called Mādhava or Mādhavakara in the colophons of manuscripts of the Nidāna and its commentaries and of the *Cikitsā* His name appears as Mādhava and Mādhavakara in Vijayaraksita's part of the *Madhukośa.* Śrīkanthadatta refers to him as *Mādhavakāra* in the *Vyākhyākusumāvalī* on the *Siddhayoga* The colophon of the manuscript of the Mādhavacikitsā kept in the Bhandarkar Oriental Institute calls the author vaidyarāja Mādhava, son of Candrakara, whereas the colophons of other manuscripts of the Cikitsā refer to him as Mādhava, son of Indukara Indukara, a synonym of Candrakara, is also the name of Mādhava's father in the colophon of a manuscript of Vācaspati's commentary on the Nidāna[87]

The foregoing does not suffice to decide whether the author's name was Mādhava or Mādhavakara. Since their names end in -kara, it has been supposed that Mādhava (kara) and his father belonged to the Kara family mentioned as one of the families of Bengal physicians by Bharatamallika in his *Candraprabhā*[88] The only evidence on this point is the ending-kara of the names of Mādhava and his father, but, as we have seen, there is no certainty in this respect with regard to Mādhava's name Therefore it has been rightly pointed out[89] that it is uncertain whether-kara was in fact a cogomen of Mādhava or not The name of Mādhava's father need not imply a Bengal origin, for authors are known with a name ending in —kara who did not belong to Bengal[90]

In the past there has been confusion as to the identity of Mādhava. This confusion was created by Hoernle in an article about the commentaries of the *Suśrutasamhitā*[91], in which he assumed on faulty grounds that Mādhava and Vrnda might be one and the same person The fact that Vrnda's *Siddayoga* is also known as *Vrndamādhava* strengthened him in his belief that the *Mādhavanidāna* and the Siddhayoga were the two parts of one work by Vrnda Hoernle was unaware of the existence of the *Mādhavacikitsā.* The discovery of the latter has made it quite clear that Hoernle's views do not reflect the real state of affairs

Date Mādhava(kara)'s terminus post quem can only be deduced[92] from the sources of the Nidāna and Cikitsā As the greater part of the *Rogaviniścaya* consists of stanzas borrowed from the *Carakasamhitā*, *Suśrutasamhitā*, *Astāngahrdayasamhitā*, *Astāngasamgraha*, and *Siddhasāra*, and as the *Mādhavacikitsā* contains many verses quoted from the *Siddhasāra*, their dates of composition cannot be earlier than about A D 650[93] The terminus ad quem is the date of Vrnda, about A D 900, because the *Mādhavanidāna* is mentioned in the *Siddhayoga*[94]

Moreover, it has been common knowledge for a long time that a number of Arabic authors refer to an Indian medical treatise which may be the *Mādhavanidāna*[95]

Among the Indian medical works recorded by Ibn Abī Usaybi^{c}a (who died in 1270) in the twelfth book of his 'Classes of physicians', the ^{c}Uyūn al-anbā' fī tabaqāt al-atibbā', one finds a treatise with the title of bdān or ydān, already corrected into ndān, i e , *Nidāna*, by Dietz[96]. Uṣaybi^{c}a observes that the signs of 404 diseases are described in the work without indicating their treatment[97] This characterization points rather to a work like the Mādhavanidāna than to the Nidānasthāna of one of the classical samhitās, because a restricted number of diseases is dealt with in the latter under that heading The Nidāna is also mentioned by Arabic authors who lived earlier than Ibn Abī Usabi^{c}a, viz., al-Rāzī and Ibn Wādih al-Ya^{c}qūbī[98] The latter describes it in the same way as Uṣaybi^{c}a Important new evidence came to light in 1928 with the edition of ^{c}Alī ibn Sahl al-Ṭabarī's Firdaws al-hikma, i.e , Paradise of Wisdom, by M Z Siddiqi[99] In the so-called Indian books of this treatise[100] several Indian medical works are mentioned: jrk, ssrd, ndān, and as͟h tānqhrdy, i e , Caraka, Suśruta, Nidāna, and Astāṅgahrdaya It is highly probable that ndān is the *Mādhavanidāna,* as no other famous Indian book with a similar title could have spread to the Arab world at so early a date (about 850). This reference to the Nidāna is the earliest one known in Arab literature. Because of its importance it is expedient to summarize the most salient facts about this work and its author[101]

Abū'l Hasan ^{c}Alī ibn Sahl Rabban al-Tabarī completed his Firdaws al-hikma fī'l tibb in Sāmarrā in the third year of the reign of the caliph al-Mutawakkil, i e , in 849/850 It is a work of large scope giving a survey of the Greek, Syrian and Indian system of medicine as known to the Muslims. Its arrangement is less methodical than that of later medical works in Arabic, but it is often quoted by al-Rāzī and others Particularly important is the thirtieth and last section of the Paradise of Wisdom, which deals with Indian medicine In thirty-six chapters, the majority of which are rather short, it succinctly describes the theory and general therapeutic principles of Indian medicine, while at the end a number of recipes are found The translation of Sanskrit medical terms into Arabic is usually correct[102], which indicates that ^{c}Alī ibn Sahl made use of the translations of Sanskrit medical works executed by order of the first ^{c}Abbāsid caliphs, in particular Hārūn al-Ras͟hid (768-809) and the Barmakids[103]

The Nidāna as a separate book is mentioned once in the Indian books of the Paradise of Wisdom The term Nidāna appears on two other occasions, where, however, it is not the Mādhavanidāna that is referred to, but the Nidāna section of some other treatise No direct translation of parts of the *Mādhavanidāna* is traceable nor of the *Caraka-*, *Suśruta-* and *Astāṅgahrdayasamhitā,* for ^{c}Alī ibn Sahl only gives summaries of Indian medical doctrines

Accepting the evidence supplied by ^{c}Alī ibn Sahl and later Arabic authors and taking into account the time needed for the work of an Indian writer to become so famous as to be translated into Arabic in Persia and to be employed as one of his chief sources by an Arabic author in 849/850, it appears reasonable to suppose that Mādhava lived in the eighth century

NOTES

1 Some of the most important among the numerous (more than fifty) editions are. a) with the commentary Madhukośa by Vijayarakṣita and Śrīkaṇṭhadatta and the commentary *Ātaṅkadarpaṇa* by Vācaspati, ed by Vaidya Jādowjī Tricumjī Āchārya, Nirnaya Sāgar Press, 1st ed , Bombay 1920, the 2nd-5th editions contain only extracts from the complete text of the Ātaṅkadarpaṇa b) with the commentary *Madhukośa,* a Hindī translation of text and *Madhukośa,* and a Hindī commentary, ed. by Dīnānāth Śarmā, 3 vols , 3rd ed , Delhi 1968/69. c) with the commentary *Madhukośa,* a Hindī commentary and explanations by Sudarśanaśāstrī, ed by Yadunandopādhyāya, *Kāśī Samskrta Granthamālā* 158, 2 vols., 2nd rev ed., Vārānasī 1960, 3rd ed , 1968. d) with the commentary *Madhukośa,* a Hindī translation of text and commentary, and explanations, ed by Narendranāthaśāstrī, Motīlāl Banārsīdās, 1st ed , Vārānasī 1979

Translations into European languages a) Italian translation of chapters 1-5 of the *Mādhavanidāna* M *Vallauri, Saggio di versione del "Mādhavanidāna"*, Giornale della Società Asiatica Italiana, 1913/14, 26,253-290 b) English translation of chapters 1-10 of the *Mādhavanidāna,* together with the Madhukośa and extracts from the Ātaṅkadarpaṇa G.J. Meulenbeld, The Mādhavanidāna and its chief commentary, chapters 1-10; introduction, translation and notes, Orientalia Rheno-Traiectina XIX, Leiden 1974 c) text of the *Mādhavanidāna* with an English and Hindī translation of chapters 1-32 G D Singhal, S N Tripathi and K R Sharma, Āyurvedic clinical diagnosis based on Madhava Nidana, Part I (Chapters 1-32), 1st ed , Varanasi 1985 d) text of the Mādhavanidāna and an English translation by K R Srikanta Murthy, Jaikrishnadas Ayurveda Series No 69, 1st ed , Varanasi 1969

References are to edition a (5th ed , 1955)

2 Edition. Mādhavacikitsā, with Hindī translation, ed by Sohanlāl Dādhīca and Bhanvarlāl Dūgar, 1st ed , Sardārśahar (Rājasthān) 1979

3 Synonymous titles are *Rugviniścaya* (Hemādri on AH *Nidānasthāna* 1 3d-4ab, 2 53ab, etc) and *Gadaviniścaya* (Vrnda's *Siddhayoga* 1 2)

4 It is quoted as *Mādhavanidāna* by Ādhamalla in his commentary on the *Śārṅgadharasamhitā* (I 7 80b-82ab), in the same commentary it is also called *Mādhavasamgraha* (I 7 160ab)

5 Mādhava did not inform us of his sources, mentioning only that he based his work on the words of various sages (1 2) The sources are indicated in editions a, b, c, and the translations c and d, but, unfortunately, they are not complete and not always reliable A more detailed concordance of the sources of chapters 1-10, the *Siddhasāra* excepted, can be found in Appendix one of translation b

6 In many cases it cannot be decided whether the *Astāṅgahrdayasamhitā* or the *Astāṅgasamgraha* has been utilized by Mādhava because the contents of the Nidānasthāna of both works are for the greater part identical Some verses, however, are definitely from the *Astāṅgasamgraha,* e g , 2 40 = *Nidānasthāna* 96 cd-97ab, 2 41 = 2 95cd-96ab, 2 42 = 2 100cd-101ab, 2 43

= 2 101cd-102, 6 10 = *Sūtrasthāna* 11 31; 6 12 = *Sūtrasthāna* 11 32, 68 10-11 = *Uttarasthāna* 2 97-98, 68 14-15ab = *Uttarasthāna* 2 92-93ab

7 The discovery that Ravigupta's Siddhasāra was one of Mādhava's sources we owe to R E Emmerick (see his review of G J Meulenbeld's The *Mādhavanidāna* and its chief commentary in the Bulletin of the School of Oriental and African Studies, 1975, 38/3, 649-650) The verses from the *Siddhasāra* incorporated in the *Mādhavanidāna* (about 28 in number) are indicated at the bottom of the pages of R E Emmerick's edition of the Sanskrit text of the *Siddhasāra*· The *Siddhasāra* of Ravigupta, Volume 1. The Sanskrit Text, edited by R E Emmerick, Verzeichnis der orientalischen Handschriften in Deutschland, Supplementband 23, 1, Franz Steiner Verlag GMBH, Wiesbaden 1980

8 Mādhavanidāna 51 2 is from a *tantrāntara* according to Cakrapānidatta on CS *Cikitsāsthāna* 15 47a, 55 6-7 derive from 'elsewhere' (anyatra) according to Gayadāsa on SS *Nidānasthāna* 13 9-10

9 See, for example, the chapters on *ūrustambha* (24) and *medoroga* (34)

10 *See, for example, chapters 13 (svarabheda)*, 14 (*arocaka*), 37 (*vrddhi*), and 38 (*galaganda*, etc)

11 See Appendix one of G J Meulebeld, The *Mādhavanidāna* and its chief commentary

12 See, for example, chapters 41 on *vranaśotha* (compare SS *Sūtrasthāna 17)* and 64 on *mūḍhagarbha* (compare SS *Nidānasthāna 8*)

13 Examples are 39 1-4 on ślīpada, not based on the verses of AH *Uttarasthāna* 29, but loosely related to prose from SS *Nidānasthāna* 12, chapter 44 on *bhagna,* based on the prose of SS *Nidānasthāna* 15 and not on the verses of AH *Uttarasthāna* 27, chapter 46 on *bhagandara,* based on the prose of SS *Nidānasthāna* 4 and not on the verses of AH *Uttarasthāna* 28, chapter 47 on *upadamśa,* related to prose from SS *Nidānasthāna* 12 and not based on verses from AH *Uttarasthāna* 33

14 Chapters 25 (*āmavāta*), 26 (*śūla*), 50 (*śītapitta*), 51 (*amlapitta*), 53 (*visphota*), 54 (*masūrikā*), 63 (*yonikanda*)

15 From SS *Uttaratantra* 47, which deals with *pānātyaya,* etc , as well as with *dāha*

16 From SS *Nidānasthāna* 10, which deals with *visarpa, nādī* and *stanaroga*

17 Related to SS. *Nidānasthāna* 12, which deals with *vrddhi, upadamśa* and *ślīpada,* the AH describes it in *Uttarasthāna* 33, the chapter on the much larger group of *guhyarogas*

18 For the greater part from AH *Nidānasthāna* 13, which is concerned with *pānduroga, śopha* and *visarpa,* the SS describes *visarpa, nādī* and *stanaroga* in one and the same chapter (*Nidānasthāna* 10), the *Siddhasāra* has already a separate chapter on *visarpa*

19 Described in CS *Cikitsāsthāna* 30 on *yonivyāpad,* etc , and in SS *Śārīrasthāna* 2

20 From SS *Nidānasthāna* 10, dealing with *visarpa, nādī* and *stanaroga*

21 The characterization of *nidrā* and *tandrā* is from SS *Śārīrasthāna* 4, the verses on *mūrchā* and *samnyāsa* are from CS *Cikitsāsthāna* 24, SS *Uttaratantra* 47, and the *Siddhasāra*

22. The verses on *ānāha* are from SS *Uttaratantra* 56, those on udāvarta from *CS. Sūtrasthāna* 7 and SS *Uttaratantra* 55
23 Mādhava's order ıs *galagaṇḍa, gandamālā, apacī, granthı, arbuda,* hıs source, *SS.* Nıdānasthāna 11, has *granthı, apacī, arbuda, galagaṇda* (*gandamālā* is absent)
24 Warts on the penıs are also referred to ın the chapter on hemorrhoıds (5.42)
25 Mınor dıseases (*kṣudraroga*) are not less severe dıseases, but those wıthout a number of doṣıc or other subtypes.
26 The lıst of SS *Nıdānasthāna* 13 3 gıves 44 ıtems (actually 48 are descrıbed) ın agreement wıth the number of *ksudrarogas* acknowledged by Brahmadeva (see *Ḍalhaṇa* on SS *Nıdānasthāna* 13 3)
27. Mādhava follows *Gayadāsa* ın regardıng *vısphotaka, pāmā, vıcarcī,* and *rakasā* as not belongıng to the group of *ksudrarogas* (see Dalhana on SS *Nıdānasthāna* 13 3 and Gayadāsa on *SS Nıdānasthāna* 13 18) Mādhava descrıbes visphota(ka) ın a separate chapter (53) and ın that on kuṣtha (49.22), *pāmā* and *vicarcıkā* are dealt wıth ın the chapter on *kustha* (49 21-23ab), *rakasā* is absent from the *Mādhavanıdāna.*
28. The *Mādhavanidāna* devotes a separate chapter to *masūrıkā* (54)
29. Mādhava descrıbes carmakīla ın the chapter on hemorrhoıds (5 43)
30. Saıd to be a mastoıd cyst by K R Srıkanta Murthy (see note 1, translatıon d).
31. Mādhava's descrıptıon has not been borrowed from Vāgbhaṭa.
32. A dısease occurrıng ın chıldren drınkıng mılk from a mother who has become pregnant agaın
33 Eczema accordıng to K R. Srıkanta Murthy (see note 1, translatıon d).
34 The chapter on *udāvarta* and *ānāha* (27) separates those on *śūla* and *gulma*
35 *vısphoṭa* ıs also one of the forms of *ksudrakustha* ın the *CS* (*Cıkıtsāsthāna* 7 25), the works of *Vāgbhata* (*AH Nıdānasthāna 14 27cd-28a, AS. Nıdānasthāna* 14 29), and the *Mādhavanıdāna* (49 22)
36 The term *āmavāta* ıs found ın the AS (*Cıkıtsıtasthāna* 18 5)
37 *Parınāmaśūla* may be related to *annadosasamudbhavaśūla* of *SS.* (*Uttaratantra* 42 142-144)
38 The sıxth verse ıs not on *śītapıtta,* but on *kotha* and *utkotha*
39 *Udarda* ıs one of the *kapharogas* ın the *CS* (*Sūtrasthāna* 20 17), *kotha* and *utkotha* form part of the *ksudrarogas* ın Vāgbhata's works (AH *Uttarasthāna* 31 32-33ab = AS *Uttarasthāna* 36.30)
40 See CS Cıkıtsāsthāna 15 47 (Cakrapānıdatta appears to quote, wıthout sayıng so, *Mādhavanıdāna* 50 2), AH Nıdānasthāna 5 42 = AS *Nıdānasthāna* 5 44), Indu on AS Sūtrasthāna 13 2 The *CS* (*Sūtrasthāna* 26 43) mentıons amlapıtta as a dısorder (*vıkāra*) caused by the use of substances wıth a salt taste, the same samhıtā refers to ıt as a dısorder caused by the ıngestıon of dısagreeıng foods (*Sūtrasthāna* 26 103) Dalhana states (on SS *Sūtrasthāna* 21 11) that some regard *amlapıtta* as a dısease The *Bhelasamhıtā* mentıons amlapıtta once as a *vıkāra* (*Kalpasthāna* 6 11)
41. Thıs verse ıs found ın *Vaṅgasena* (59 12)
42 The term *masūrıkā* ıs also applıed to one type of *pramehapıdakā* (boıls arısıng ın patıents wıth prameha, especıally *madhumeha,* ı e , dıabetes mellıtus), see

SS *Nidānasthāna* 6 18ab = *Mādhavanidāna* 33. 32cd, AH *Nidānasthāna* 10 32ab and AS *Nidānasthāna* 10 12

43 Other names of this disease are varāhadamṣtra (Madhukośa on *Mādhavanidāna* 55 55), *varāhadaśana (Vaṅgasena* 64 213) and varāhadvija (Vaṅgasena 64 212 and 214)

44 Atrophy according to K R Srikanta Murthy (see note 1, translation d)

45 Falling out of the eyelashes according to K R Srikanta Murthy

46 Śrīkanthadatta must be wrong, since the two diseases do not resemble each other

47 These commentaries, fifteen in number, do not fall within the scope of this survey because all of them are posterior to about A D 1000

48 The title is absent from the text and mentioned in the colophon only

On the *Mādhavacikitsā* see also G J. Meulenbeld, The *Mādhavanidāna* and its chief commentary, 8-10, P V Sharma, *Āyurveda kā vaijñānika itihāsa,* Jaikrishna Das Āyurveda Series No 1, 1st ed , Varanasi 1975, 259-262; Arion Roşu, *Notice sur le Mādhavanidāna,* Wiener Zeitschrift fur die Kunde Sudasiens, 1977, 21, 183-184, G J Meulenbeld, *Observations on some medical authors called Mādhava and their works,* in. Études sur la médecine indienne, Journées d'Études sur la médecine indienne, Strasbourg, 19-20 juin 1978, ed by G Mazars, Scientia Orientalis No 16, Strasbourg 1979, 60-63, J Laping, On *Mādhavacikitsā,* in: *Studies on Indian Medical History,* ed by G Jan Meulenbeld and Dominik Wujastyk, Groningen Oriental Studies Vol II, Groningen 1987, 113-116

The edition of the *Mādhavacikitsā* by S Dādhīca and B Dūgar is based on three manuscripts kept in libraries in Bīkāner, Udaypur and Jaypur (see the Introduction to the edition).

49. Ravigupta's *Siddhasāra,* although for the greater part devoted to therapy, also deals with general principles, pharmacology and nidāna

50. *Vrnda* added chapters on *arista* (signs foreboding death) and *svastha* (rules for the preservation of health)

51 Cakrapānidatta added chapters on *sirāvyadha* (bloodletting) and svastha

52 Described in the chapter on *atīsāra* of the *Mādhavanidāna* (3 22), neither *Vrnda's Siddhayoga* nor the *Cakradatta* has a separate chapter on *pravāhikā*

53 Described in the chapter on *unmāda* of the *Mādhavanidāna* The *Siddhayoga* and *Cakradatta* do not have a separate chapter on *bhūtonmāda*

54 *Described in the chapter on vātavyādhi* of the *Mādhavanidāna* (22 54-55ab) The *Siddhayoga* and *Cakradatta* do not contain a separate chapter on *grdhrasī*

55 Described in the chapter on udara of the *Mādhavanidāna* (35 15cd-17) The *Cakradatta* has a separate chapter on *plīhayakrccikitsā*

56 Not described in the *Mādhavanidāna* The *Siddhayoga* has a similar chapter on *śothodara* (i e , the same as *śophodara*), according to the commentary on this work, the *Vyakhyākusumāvalī, śothodara* is a complication of udara

57 Not described in the *Mādhavanidāna*

58 Not described in the *Mādhavanidāna*

59 The *Cakradatta* also deals with *visarpa* and *visphota* in one chapter

60 The *Mādhavanidāna* has three chapters on the subject (*vranaśotha, śārīravrana, sadyovraṇa*), the *Siddhayoga* deals with it in two chapters (*vraṇaśotha* and *āgantuvrana*), the *Cakradatta* in one chapter (*vranaśotha*).

61 The *Siddhayoga* has chapters on *pradara, yoniroga* and *strīroga;* the *Cakradatta* on *asrgdara, yonivyāpad* and *strīroga.*

62. As to the position of these diseases in Sanskrit medical literature see: G.J. Meulenbeld, *Development in traditional Indian nosology* The emergence of new diseases in post-classical times, in Hans Jochen Diesfeld (Ed.), *Health research in developing countries,* Medizin in Entwicklungslandern 11, Frankfurt am Main/Bern 1982, 117-128. See also C Vogel, On the *Guinea-worm disease in Indian medicine,* The Adyar Library Bulletin, 1961,25, 55-68

63. P V Sharma, *Āyurveda kā vaijñānika itihāsa,* 260, S Dādhīca and B. Dūgar, Introduction to the edition of the *Mādhavacikitsā.*

64 The chapter on *snāyuka* of the *Mādhavacikitsā* differs in some respects from the group of verses on the same subject in the *Siddhayoga.* The chapter on *somaroga* contains a characterization of *mūtrātisāra* (= *somaroga*), the only description of a disease in the *Mādhavacikitsā.*

65 No. 143, see P V Sharma, *Āyurveda kā vaijñānika itihāsa,* 260, for the titles of the chapters in this manuscript, in which the chapters on *kaumārabhṛtya* are unfortunately missing It remains unknown whether all or part of the three manuscripts used for the edition of the *Mādhavacikitsā* contain the verses on *snāyuka* and *somaroga* because the edition has no critical apparatus

66. Some examples are 7.2-4 and 6, 37. 6-7; 39 6 and 12

67 Prescribed for the first time in the *Siddhayoga* (7.1).

68 Used for the first time in a formula of the *Siddhayoga* (22 67-71)

A closely related or identical tree, *babūla,* is mentioned in the chapter on *upadaṃśa* (47 7) and in that on *snāyuka* (53.2) of the *Mādhavacikitsā*

69 See *Siddhayoga* 56 8 and 30, 68 6

70 Examples are *brhadagnimukha* (*Siddhayoga* 6 33-42), *khaṇdakhādyaloha* (9 65-79), *kaiśorakaguggulu* (23. 34-42), *yogasārāmrta* (23 56-61), *gudamandūra* (27 31-36)

71 See on this plant G J Meulenbeld, *Some notes on the history and identity of kañcata, Journal of Research and Education in Indian Medicine,* 4, 1985, 51-56

72 Carmakīla does not form part of the *ksudrarogas* in the *Mādhavanidāna.*

73 The *Siddhayoga* (65 19) describes the same *yantra* in a different verse, the *Cakradatta* (*strīroga* 10) contains the same verse as the *Mādhavacikitsā* See on *yantras* in medicine Arion Roşu, Études āyurvédiques III, Les carrés magiques dans la médecine indienne, in G Jan Meulenbeld and Dominik Wujastyk (Eds), *Studies on Indian medical history, Groningen Oriental Studies Vol* II, Groningen 1987, 103-112

On special features of the *Mādhavacikitsā see* also P V Sharma, *Āyurveda kā vaijñānika itihāsa,* 261-262

74 The formula of *māñjisthakaghrta* (1 117) is said to derive from Bheda According to P V Sharma (*Āyurveda kā vaijñānika itihāsa,* 261) the *Mādhavacikitsā* quotes Caraka, Suśruta, Vāgbhata, and Caksusyena

75 The *Mādhavacikitsā* contains at least more than forty verses which were borrowed from the *Siddhasāra*

76. Meulenbeld, G.J *The Mādhavanidāna and its chief commentary,* 10-14

77 See his edition of the *Mādhava-dravyagunah, Vidyābhavan Āyurveda Granthamālā* 72, Vārānasī 1973, and his *Āyurveda kā vaijñānika itihāsa,* 373-375 and 384-385

78. A variant reads *Praśnasahasranidāna.*

79 Bhattacharyya D C , New light on Vaidyaka literature (from Niścalakara's *Ratnaprabhā*), Indian Historical Quarterly, 1947, 23, 144

80. This series consists of Jejjata, Vāpyacandra, Mādhavakara, and Kārttikakunda.

81 Bhattacharyya, D C , l c , 153

82 Bhattacharyya, D C , l c , 140

83. Dasgupta S , *A History of Indian philosophy* II, 428

84. *Ayūrveda kā vaijñānika itihāsa,* 208

85. On *Siddhayoga* 10 47cd.

86 Bhattacharyya D.C , l c., 146 and 153

87 Bhandarkar Oriental Institute No 149

88 Bhattacharyya, D C., l.c , 128-129 Bharatamallika (17th century) wrote a history of the Vaidya families of Bengal called *Candraprabhā* or *Vaidyakulapañjikā*

89 De, S K , *On some Vaidyaka writers of Bengal, Indian Culture,* 1937/38, 4, 273-274, and, by the same author, *Sanskrit literature under the Pāla kings of Bengal,* New Indian Antiquary, 1939/40, 2, 273

90 De, S.K (New Indian Antiquary, 1939/40, 2, 273) adduces as an example Bhānukara, the author of the *Rasikajīvana*

91 Hoernle, A F R , *Studies in ancient Indian medicine,* I The commentaries on Suśruta, Journal of the Royal Asiatic Society, 1906, 283-302

92 See Meulenbeld, G J , *The Mādhavanidāna and its chief commentary,* 17-19, on Hoernle's erroneous views regarding Mādhava's sources and their bearing on chronological problems

93 See Emmerick, R E , *The Siddhasāra of Ravigupta,* Vol I The Sanskrit text, Wiesbaden 1980, 1

94 *Siddhayoga* 1 2

95 The material on this subject was collected for the first time by A Muller, *Arabische Quellen zur Geschichte der indischen Medizin,* Zeitschrift der Deutschen Morgenlandischen Gesellschaft, 1880, 34, 465-556

96 Dietz F R , Analecta medica ex libris Mss Fasciculus primus, in quo insunt 1 Elenchus materiae medicae Ibn Beitharis Malacensis secundum codices Mss Arabicos Escorialenses, Matritenses, Parisiensem, Hamburgensem Pars Prima 2 Catalogus codicum de re medica Sanscritorum, qui in palatio societatis negotiatorum Indiae Orientalis (East India House) Londini adservantur, Lipsiae 1833, 122

97 The number of 404 diseases is characteristic of Buddhist medicine (see Louis Renou et Jean Filliozat, L'Inde classique, tome II, Paris 1953,162)

98 Siddiqi M Z , *Indian as known to the ancient Arabs, Indo-Asian Culture,* 1957, 5, 279, by the same author, *Studies in Arabic and Persian medical*

literature, Calcutta 1959, 33-34 Al-Ya^{c}qūbī lived in the second half of the ninth century (R A Nicholson, *A literary history of the Arabs*, Cambridge 1962, 349)

99 Sonne Press, Berlin 1928

100 The Indian books were translated by A Siggel. *Die indischen Bücher aus dem Paradies der Weisheit uber die Medizin des ^{c}Alī ibn Sahl Rabban at-Tabarī, ubersetzt und erlautert von A Siggel*, Akademie der Wissenschaften und der Literatur, Abhandlungen der Geistes-und Sozialwissenschaftlichen Klasse, Jahrgang 1950, Nr 14, Wiesbaden 1951

101 See also M Meyerhof, *^{c}Alī ibn Rabban at-Ṭabarī, ein persischer Arzt des 9. Jahrhunderts n Chr , Zeitschrift der Deutschen Morgenländischen Gesellschaft*, 1931, 85, 38-68, by the same author, ^{c}Alī at-Ṭabarī's "*Paradise of Wisdom*", one of the oldest Arabic Compendiums of Medicine, *Isis*, 1931, 16, 6-54; M Z Siddiqi, *Studies in Arabic and Persian medical literature*, Calcutta 1959, XLII-XLVIII and 42-95.

102 M Meyerhof, Zeitschrift der Deutschen Morgenlandischen Gesellschaft, 1931, 85, 64

103 M Z Siddiqi, Indo-Asian Culture, 1957, 5, 374-378 A Siggel (Die indischen Bucher, 1102) holds the view that *^{c}Alī ibn Sahl* based his work on earlier translations of Indian texts into Syriac or Persian, Siggel also refers to an Arabic translation of the *Mādhavanidāna* made by order of Hārūn al-Rashīd (Die indischen Bucher, 1147)

9.5

VṚNDAMĀDHAVA

K.R. SRIKANTA MURTHY

The term 'Vrndamādhava' though composed of the names of two pesons, stands for neither of them nor for a third person It is actually the second name of a treatise called Siddhayoga as can be gathered from the colophon at the end of every chapter of this text.[1]

Vṛnda, its author, states that the book is modelled on the pattern (of chapters) as obtained in '*Gadaviniścaya.*'[2] This book '*Gadaviniścaya*' is none other than '*Rugviniścaya*' of *Mādhavakara,* which enjoyed great popularity and so deserved to be the model for a new treatise Thus Siddhayoga embodies the contributions of both *vṛnda* and *Mādhavakara* * In ancient times in India, book were being indicated in the name of their author also and many a time they became more popular in such second name The best example is provided by '*Rugviniścaya*' itself which is more popular as '*Mādhavanidāna*' Likewise '*Siddhayoga*' has come to be known more popularly as *Vṛndamādhava* (VM).

Fortunately, this treatise is available in full and has been published The text alongwith an important commentary published by the Anadāśrama Granthamālā, Poona (2nd Edn 1943) forms the basis for this review.

The Author

Except for giving out his name as Vrnda[3], the author has chosen to remain silent on informations regarding his parents, date, residence, other literary works etc. None of the later authors also has furnished any additional information On the other hand, they have called him variously leading to difficulty of identification Śrīkanthadatta, the famous commentator on this treatise, calls him 'Vrndakantha' at the introductory sentence of his commentary[4] and simply as 'Vrnda' in the colophon at the end of every chapter. Niścalakara in his commentary on *Cikitsāsangraha* (of Cakrapānidatta) calls our author sometimes as '*Vrndakunda*' but more often as 'Vrnda [5] The term 'Kunda' appears as the name of a family of reputed physicians of Bengal** Bharatmallika, a scholar of Bengal (19th cent) in his book 'Candraprabhā' says that 'Vrndakunda who wrote a medical treatise was a resident of Eastern Bengal'[6] Bhattacharya D C opines that Kārtikakunda (one of the commentators on *Suśruta-samhitā*) and Vrndakunda

* Probably '*Vrndamādhava*' would mean 'Vrnda's work following the order of Mādhava (Nidāna)' (ed)

** now popularly known as Kundu (ed)

belong to the same famıly ın vıew of the term 'Kunda' beıng common ın both the names [7]

Hence, we would be justıfied ın assumıng that Vrnda was hıs actual name, he was called Vrndakunda ındıcating hıs famıly and as Vrndakaṇtha, out of reverence for hıs scholarshıp and socıal status he enjoyed ın Bengal *

Hıs offerıng of obeısances to Śıva, Candī, Ganeśa and hıs retınue, the great sage Dhanvantarı, other sages lıke Suśruta and the great ascetıc Ātreya ın the ınvocatory verse[8], goes to prove that he belonged to Hındu Brāhmana famıly devoted to the worshıp of Śıva.

Nothıng more can be saıd about hım except that he was a reputed scholar of Āyurveda and a practıcıng physıcıan

Apart from Sıddhayoga (VM) no other book of Vrnda ıs avaılable now Śrīkanthadatta, the commentator, ındıcates that Vrnda ıs the author of eıther a commentary or a gloss on *Carakasamhıtā* also[9]. Thıs ıs not available now

As regards the date of Vrnda, the followıng poınts form the basıs for determınatıon.—

1 Vrnda namıng Gadavınıścaya of Mādhavakara (7th cent A D) as the model for hıs book forms the upper lımıt, whıle *Cakrapāṇıdatta* (11th Cent A D) makıng *Sıddhayoga* as the model for hıs book '*Cıkıtsāsangraha*'** forms the lower lımıt Hence Vṛnda has to be placed between 7th and 11th cent A D

2 Vrnda makes mentıon of Jejjata as a commentator of *Carakasamhıtā* [10] So Vrnda has to be later than 9th Cent A D , the perıod of Jejjata

3 From a cıtatıon ın Śrīkanthadatta's commentary[11] ıt ıs presumed that Vrnda ıs posterıor to 'Kārtıkakunda' whose date ıs about 700 A D

4 A scholar named Brahmadeva has wrıtten a commentary on Sıddhayoga ın addıtıon to hıs commentarıes on the Samhıtās of both Caraka and Suśruta The most probable date for thıs commentary ıs between 900 A D , and 1100 A D [12]

5 The Arabıan hıstorıan Ib-Wadıh-al-Yaquıbı who lıved ın the second half of the 9th cent A D mentıons an Indıan medıcal treatıse by name '*Sındhshan*' whıch accordıng to M Z Sıddıque ıs '*Sıddhayoga* [13]

* or 'Kantha' may be scrıbal error for 'Kundu' (ed)

** see the concludıng verse ın the Cıkıtsāsangraha (ed)

6 Absence of *Rasausadhas* (medıcal formulae prepared chıefly from ınorganıc substance — metals, mınerals etc especially mercury), helps ın assıgnıng the text earlıer than 11th cent A D

Wıth these major landmarks, modern scholars place Vṛnda between 800 A D , and 900 A D [13A] Wıth thıs placıng, Vrnda wıll be posterıor to Drdhabala, Vāgbhaṭa, Mādhavakara, Jejjata and Kārtıkakunda and anterıor to Cakrapānıdatta, Dalhana, Vıjayaraksıta and Nıścalakara

The Treatise:

The name whıch Vrnda has gıven to hıs treatıse ıs '*Sıddhayoga*'. To state ın hıs own words 'after goıng through the treatıse of many sages, wıthın the lımıts of my knowledge, thıs Saṅgraha of '*Sıddha yogas*' (collectıon of formulae of proven effıcacy) has been composed wıth great effort![14] 'Thıs '*Sıddhayoga*' ıs composed by me, named Vrnda, of poor intellect, for my own satısfactıon, on the pattern of Gadavınıścaya, collectıng from dıfferent treatıses, those medıcınal formulae, whıch after many trıals are found to be effıcacıous and hence reputed (popular), alongwıth explanatory notes havıng the ıdeas of Scrıpture and of myself![15] However, the book has gaıned popularıty ın ıts second alternate name '*Vrndamādhava*' testıfied by the colophon at he end of every chapter

The text ıs composed ın the form of poetry, (very few lınes of prose creepıng ın rarely), the total number of verses ıs 3700 approxımately, thus makıng the treatıse a medıum-sızed volume Majorıty of the verses are devoted to the descrıptıon of medıcınal formulae ın 82 chapters of the text Among the chapters, the fırst 68 are devoted to dıfferent dıseases, the next two (69 and 70) for Rejuvenatıon (*Rasāyana*) and Vırılıfıcatıon (*Vājīkarana*) therapıes respectıvely, the next nıne chapters (71-79) one each for descrıbıng therapıes such as oleatıon (*Snehana*) sudatıon (Svedana) emesıs (*Vamana*) purgatıon (*Vırecana*) oıl-enema (*Snehabastı), decoctıon-enema (Nırūha)* smokıng (*Dhuma*) nasal medıcatıon (N*asya*) and mouth gargles (*Kavala-Gandūsa*), chapter 80 descrıbes auspıcıous and ınauspıcıous omens, dreams and fatal sıgns, chapter 81 mentıons brıefly the qualıtıes and functıons of *Dosas*, *Dhātus* etc , unwholesome foods and actıvıtıes, seasonal regımen and rules of health The last chapter (82) mentıons the qualıtıes of therapeutıcs, weıghts and measures and other mıscellaneous subjects

Though the author states that the book ıs modelled on the pattern (of the chapters) on *Gadavınıścaya (Mādhavānıdāna)*, yet we fınd the followıng varıatıons ın the arrangement of chapters —

1 Four new chapters (*Jvarātısāra, Parınāmaśūla, Ānāha* and *Śothodara*) have been added

2 Small, ındependent chapters have been combıned ınto one (*Yonıkanda, Mūdhagarbha, Sūtıkāroga, Stanaroga* and *Stanyaroga* ınto *Strīroga, Śārīravrana* ınto *Vranaśotha*)

3. Some chapters have been given independent status (*Bālagraharoga* and *Udāvarta*)

4. Some diseases which are considered to be incurable have not been mentioned (*Yavaprakhya, Kakṣā, Niruddhaprakaśa, Agnirohiṇī, Sanniruddhaguda* etc.).

5 Two new diseases *Vardhma* (Inguinal hernia) and *Snāyuka Roga* (Guneaworm infection) have been described the latter for the first time.

Siddhayoga concerns mainly with treatment of diseases, each chapter containing medicinal formulae for one or more diseases Every chapter (from 1 to 70) commences with a brief mention of the kinds of therapies required, followed by description of formulae alongwith their ingredients, their proportion, mode of preparation and administration, dosage, actions and indications Most of the chapters end with enumeration of suitable and unsuitable foods and activities Certain kinds of medicinal diets, their mode of preparation and properties are also mentioned In addition to medicinal formulae, different kinds of therapies needed in specific diseases are also indicated. Application of caustic alkalies (*Ksārakarma*) fire cautery (*Agnikarma*), surgical intervention (*Śastrakarma*), blood-letting (*Raktamoksana*), wearing of amulets of potent herbs (Osadhi-dhārana), of precious stones (*Manidhārana*) *Yantra* (amulets, talismans), chanting of sacred hymans (*Mantrajapa*) worship of gods (*Pūjā, Homa* etc), magical rites (*Bhūtabandha, Pūjana, Ucchātana,* and other Atharvanic rites) have been included as part of treatment Incorporation of some Yogic methods such as *Prāṇāyama* (in the treatment of colic), *Usahpāna* and *Jalaneti* (as rejuvenators) into Ayurvedic literature has been done for the first time through this treatise Likewise is the inclusion of *Kṣārasūtra* application in rectal fistula and *Śirobasti* in diseases of the head

Another significant feature is that all the medicinal formulae belong to the category of *Kāsthausadhas* (prepared mainly from vegetable drugs) and none to the category of *Rasausdhas* (prepared mainly from metals and minerals) Mercury (*Rasa*) though mentioned, its use is limited to its natural form and that too for external application only [16] There is no mention of *Kajjalī* (black sulphide of mercury) which is an essential ingrediant of mercurial recipes As such there are no recipes such as *Sindūra, Parpatī, Potalī* and *Kūpīpakva Rasāyanas* (mercurial recipes) Metals like gold, silver, copper, bronze, lead, iron etc , are mentioned mostly for use as vessles, appliances etc , and rarely in the form of ash (*Bhasma*) for internal use, except of course, that of iron, and its slag which forms an ingrediant of some formulae

Almost all the drugs of vegetable and animal kingdoms mentioned in the earlier texts of Āyurveda, are also found in *Siddhayoga* (VM)

The formulae comprise of all the traditional forms (*Kāsthausadha-kalpas*) found in classical texts, such as fresh juice (*Svarasa*), juice obtained by cooking (*Putapāka*), cold infusion (*Hima*), hot infusion (*Phānta*), decoction (*Kvātha*) Powder (*Cūrna*),

pill-dragee (*Vaṭī-guṭī-Modaka*), medicated ghee (*Ghrta*) and oil (*Taila*), fermented decoctions (*Ariṣṭa* and *Āsavas*), errhines (*Nasya*), collyrium (*Añjana*), enema and rectal medications (*Basti, Gudavarti,* etc) mouth-gargles (*Gaṇḍūṣa-Kavala*), topical applications like pastes, unguents, ointments (*Pralepa, Pradeha, Pariṣeka,* etc.) smoke (*Dhuma*) etc

Tests for determining the genuineness of musk (*Kastūrī*) and some other drugs are also described [17] Similarly the recognition of right stage of cooking (*Pāka*) of medicated fats, confections etc., are indicated at relevant places.[18] The author has also given clarifications regarding the proportion of certain ingredients, the selection of substitute drugs as practiced by reputed physician of his day etc., at the end of some of the formulae.[19]

There are about 215 reputed formulae having specific names and many more which have no such popular name As the author has stated, most of these formulae have been collected from earlier texts and some from the experience of reputed physicians (*Vṛddha Vaidyas*) It is difficult to determine the quantum of each source. Majority of the formulae with specific names can be traced to *Carakasamhitā, Suśrutasaṃhitā, Aṣṭāṅgasaṅgraha* and *Astāṅgahṛdaya* As the author knew Gadaviniścaya (*Mādhava-nidāna*), the first book of Mādhavakara, it is quite likely, he knew Mādhavakara's *Cikitsita* also and has even borrowed many formulae from the text * The inclusion of formulae collected from elder Physicians has not only updated the method of treatment but also the credibility and usefulness of the book

With all these goods features, *Siddhayoga* quickly became very popular and exercised considerable influence on later authors and parctitioners In view of its reputation great scholars like Brahmadeva, Śrīkanthadatta and others wrote commentaries on it The celebrated Physician-commentator Cakrapānidatta wrote his book 'Cikitsāsaṅgraha' modelled on *Siddhayoga* (VM) [20] The commentator on '*Cikitsāsaṅgraha*' refers to Vrnda and his treatise as authorities [21]

Commentaries

That *Siddhayoga* had many commentaries on it, is testified by Śrīkanthadatta, the famous commentator on this treatise [21A] Among them, the following are worth mentioning, their nature being known only through the commentary of Śrīkaṇthadatta

1 *Vrnda-tippanī* — is a brief gloss (*Tippanī*) by the author himself It clarifies certain points of doubt such as proportion of ingrediants especially the liquids, mode of preparation of certain recipes, addition of certain drugs not mentioned in the text but in vogue among reputed physicians, acceptance or denial of views of earlier authors etc This is seen in the form of a few verses

* It would be evident from the comparative study of both the texts Vrnda has improved upon the Mādhava's tradition For instance, the latter left the patient of Sannipāta fever complicated with *Karnamūlośotha* entirely on fate, the former prescribed some treatment (see also Meulenbeld's paper on Mādhava) (ed)

usually found at the end of the formulae [22] It ıs dıfficult to separate them wıthout the risk of dıstortıon of the text

2 *Brahmadeva's Commentary* —Brahmadeva's commentary on *Sıddhayoga* ıs known only through the commentaryu of Śrīkaṇṭhadatta[23]. Brahmadeva ıs known to us as the commentator of both Carakasamhıtā and Suśrutasamhıtā P K Gode assıgns hım to the perıod of 900 A D 1100 A D [24]

3. *Soma-Tıppanī* — ıs another gloss referred to ın Śrīkaṇṭhadatta's commentary [25] As ıt very closely resembles the commentary of Dalhana on Susrutasamhıtā and referred to as obtaıned from ıt at certaın places, ıt ıs doubtful whether ıt ıs an ındependent commentary on *Sıddhayoga* or a part of commentary on *Suśrutasamhıtā* by thıs scholar

4. *Lakṣmana-Ṭıppanī* — ıs also known only through Śrīkaṇṭhadatta's commentary [26] Sımılar to *Soma-Tıppanı*, ıt ıs doubtful whether ıt belongs to *Sıddhayoga* or to *Suśrutasamhıtā*

5. *Vyākhyākusumāvalī* — ıs the only commentary on *Sıddhayoga* avaılable ın full to day and so is consıdered as very ımportant It ıs the work of Śrīkanthadatta orıgınally but revısed and enlarged by another scholar by name Nārāyana It ıs very dıffıcult to determıne the quantum of contrıbutıon of each Belıevıng the words of Nārāyana who says 'that the commentary of Śrīkanthadatta, who was afraıd of eloboratıon', has been enlarged wıth addıtıon of relevant references from the commentarıes of Dalhana and others, for greater benefıt[27], we can allow greater share to thıs second auhtor

Śrīkanthadatta, as ıs well known, was a resıdent of Bengal, a dıscıple of Vıjayaraksıta and the second author of Madhukosa commentary on *Mādhavanıdāna* He belongs to 12-13th cent A D *Kusumāvalı*, hıs commentary on *Sıddhayoga* ıs, ın all probabılıty, hıs second work

Nārāyana ın the concludıng verses of the commentary says that he ıs the son of a reputed Physıcıan by name Bhābhalla belongıng to a brāhmana famıly of Nāgaravaṃśa [28] He has remaıned sılent about hıs date, resıdence etc , and left ıt to be decıded Hıs mentıon of Hemādrı's (14th cent A D) commentary on *Astangahrdaya* and absence of mentıon of Bhāvamıśra (16th cent A D) or hıs work, helps us to assıgn this commentator to 14th-15th cent A D

Thıs commentary — *Vyākhyākusumāvalī* — ıs consıderd to be especıally valuable as ıt furnıshes the names, vıews and quotatıons of a large number of authors and texts (as many as 78 approxımately) some of them becomıng known only through thıs

REFERENCES

1 The colophon runs as 'thus ends the chapter ... in *Siddhayoga*, having an alternatre name *Vṛndamādhava* composed by Śrīvṛnda, alongwith the commentary called *Kusumāvālī* written by Śrīkanthadatta'
2 VM 1/2, '*Rugviniścayākhya-nidānasamgrahoktādhyāyaparipātya*' — Śrīkantha's comm
3 Ibid, VM 82/29
4 First sentence of *Kusumāvāalīvyākhyā* VM 1/1,
5 Bhattacharya D C — New Light on Vaidyaka literature — *Indian Historical quarterly* 23, p 155 1947
6 Ibid — referred to by Meulenbeld, G J — *The Mādhavanidāna and its chief commentary*. E J Brill Leiden 1974, p 427
7 Ibid p 394
8 VM 1/1
9 *Kusumāvalī* on VM 51/27 p 373
10 Ibid VM 39/33 p 320
11 Ibid VM 12/22 p 162
12 Meulenbeld G J — p 417
13 Ibid — p 427
13a Ibid — p 427 and Sharma P V — *Āyurveda-kā-Vaijñanika Itihāsa* — II edn p 281 Chowkhamba Orientalia, Varanasi 1981
14 VM 82/29 p 665
15 Ibid 1/2 p 2
16 Ibid 7/13, p 122, 44/55 p 352
17 Ibid 22/179-80, p 221
18 Ibid 1/264, 5/79, 27/30, 1/252-267 etc
19 Ibid 1/80, 10/76, 12/34 etc
20 *Cikitsāsangraha* (CD) Susthādhikara — concluding verse
21 Introductory verses of *Kusumāvalī* commentary
22 VM 1/49 p 16, 3/22, p 73, 3/47 p 77,3/59 p 79, 5-28 p 93, 9/48 p 134, 10/42 p 146, 11/17 p 155, 12/30 p 153 21/14 p 193, 22/10 p 197, 39/32 p 320 etc
23 Ibid 1/25, p 9, 1/91 p 30, 3/23 p 83, 76/1 p 566, etc
24 Gode P K — *Studies in Indian Literary History* I, p 191, 1941, and referred to by Meulenbeld, G J op cit P 416
25 VM 1/7 p 3, 80/1 p 602, 80/14 p 608, 80/27 p 610, 81/3p 615 etc
26 Ibid 70/49 p 529 etc
27 Concluding verses of his commentary VM 82/p 665
27 Ibid
28 Meulenbeld G J, op cit

9.6

TĪSAṬA AND CANDRAṬA

RAJENDRA PRAKASH BHATNAGAR

Tīsaṭa

Among the authors of medical compendia (*Yoga-saṅgrha*) the name pf Tīsaṭa can be regarded as foremost. His work entitled '*Cikitsākalikā*' is regarded as a popular, current and well-known scholarly work since long Several scholars, wnters and commentators have quoted this work in their subsequent wntings

Parentage

Tīsata was the son of Vāgbhata We find mention of this fact in the couplets given in the end of different manuscnpts of the work found at different places It would be worthwhile to mention here some of these references.

In the end of the three manuscnpts preserved in the Bhandarkar Onental Research Institute, Poona it has been mentioned in the following manner -

1 S No. 916/1844-87 (This copy seems to be very old but the date is not mentioned)

"इति श्रीवाग्भटसुततीसटविरचिताया चिकित्साकलिका समाप्ता।"

2 S No 890/1887-91 (Year of copying the manuscnpt is V S 1806 (1749 A D)

"इति श्रीवाग्भट्टस्मुनुना तीस्मटदेवेन रचित चिकित्साशास्त्र।"

3 S No 214/A 1883-1884 (penod of copying-modern)

"इति वाग्भट्टस्मुनुना तीसटदेवेन विरचित चिकित्साशास्त्र॥"

In the catalogue of manuscnpts of Alwar prepared by P Peterson (Catalogue of the Sanskrit manuscnpts in the Library of H H the Maharaja of Ulwar, Bombay, 1892, P 69) a copy of the same is mentioned In its last sentence Tīsata is referred to as the son of Vāgbhata

I have consulted the three manuscnpts preserved in the branch office of Rajasthan Onental Research Institute at Udaipur In the end of one of them (S No 493) the following colphon is given

"वैद्यवाग्भटपुत्रेण तीसटेन समुदाहृता चिकित्साकलिका सम्यक् समाप्ता ॥ 25 ॥ इति वाग्भट्टपुत्रेण तीसटेन चिकित्साकलिका समाप्ता ॥ श्रीरस्तु शुभ भवतु ॥"

The year of preparing the copy of this manuscript is V S 1683 (1626-A D.) The particular manuscript of the *Cikitsākalikā* is pretty old and is of great value

Thus in several manuscripts available in different regions Tīsata is referred to as the son of Vāgbhata

In the salutation verse (No 1) of *Cikitsākalikā Tīsata* has written as follows.-

"सूर्याश्विधन्वन्तरिसुश्रुतादीन् भक्त्या नमस्कृत्य पितुश्च पादान् ॥"

While commenting on this Candrata, the son of Tīsaṭa, has clarified the words 'पितुश्च पादान्' in this manner.

"तदनु आयुर्वेदाब्धिप्रतरणपोतपात्राणा पितु पादाना नमस्कृतिरित्यनेन क्रमेण नमस्कार कृत्वा।"

After offering salutition to the Sun, Aśvins, Dhanavantari, Suśruta and others Tīsata has paid his respects to his father In the words of Candrata, his father was like a ship with the help of which one could cross vast ocean of Āyurveda. Although the name of Vāgbhata is not mentioned here but it is clear that he was referring to him In that age, Vāgbhata's name was very popular and he was regarded as a great scholar in the field of Āyurveda Therefore, one should not be surprised if his son, instead of mentioning the illustrious name of Vāgbhata, venerates his feet

In *Astāngasangaraha* and *Astānghrdaya* written by Vāgbhata the symptoms and treatment of *unmāda*, *Apasmāra*, falling within the scope of *Bhūtavidya* are outlined in two chapters Similarly in *Cikitasākalikā* only the useful medicines for the treatment of these two diseases are given

Both Tīsata and Candrata have not mentioned the above two works of *Vāgbhata* in *Cikitsākalikā* and its commentary It was not necessary for them to do so But the style and Yogas outlined by Vāgbhata is clearly discernible in these works In *Yogaratnasamuccaya* candrata has quoted from Vāgbhata's works The style of writing in brief (*Samāsa*) was inherited by Tisata from Vāgbhata

By imbibing certain ideas from several scholarly works Vāgbhata had written '*Sangraha*' and ' *Hrdaya*' He had also quoted from these ancient scriptures These ancient works were also known to Tīsata and Candrata Therefore, the definition relating to ' *Vipāka*', which later on, in the absence of the original source, became as a work of Vāgbhata It was quoted by Candrata in his commntary as the saying of others'-

"तथाऽन्यैरप्युक्तम् – 'जाठरानलसपर्कात् यदुदेति रसान्तरम्। रसाना परिणामान्ते स विपाक इति स्मृत ।"

(CK , V 16)

The argument[1] that one does not find the glimpse of Buddhism in *Cikitsākalikā* and its commentary, as found in the works of Vāgbhaṭa, is not tenable In those days of religious tolerance a son was not bound to follow the religion of his father. The change of religion was not regarded as a controversial issue relating to the family or caste. The gteat imperor Aśoka was a follower of Buddhism but his grandson Samprati was a ' protector of Jainism'. Vim, a ruler of Kushan dynasty, was a Śaiva but one of his descendents Kaniska propagated Buddhism. Pusyabhūti, the founder of the dynasty of Harsa, was a Śaiva and tantrika but Harsa himself was Buddhist. Therefore, to determine the relifion of a son on the basis of the religion followed by his father is not a correct approach There are examples when even husband and wife were followers of different religions or sects. So there should be no difficulty in recognising Tīsat a as the son of Vāgbhaṭa This fact is supported by the use of " *Vaidya-Vāgbhaṭa-putra*" in different manuscripts.

Aufrecht has also recognised Vāgbhata as the father of Tīsata, the author of the *Cikitsākalikā*[2]

Undoubtedly the author of '*Asṭāṅgasaṅgraha*' and '*Astāṅgahrdaya*' was Vāgbhaṭa, the father of Tīsaṭa In the concluding portion of the *Asṭāṅgasaṅgraha*, Vāgbhata, while giving his introduction, has mentioned that the name of his grandfather was Vāgbhata, who was a repruted medical practitioner (bhisak) Similarly Siṃhagupta, the father of Vāgbhata was also a great scholar of Āyurvedic science [3] In this context, Vāgbhata has remembered his father as '*Vaidyaka-Vidyā-Guru*'[4] in the same manner as Tīsaṭa has remembered his father Vāgbhata in *Cikitsākalikā*

Residence:

Vāgbhata has mentioned Sindhupradeśa as his place of birth (sindhusu labdhajanmā, AS U 50) Therefore the place of residence of Tīsata, his son, too may be taken as Sindhu Pradeśa (now Sindh in West Pakistan) Candratta, the son of Tīsata also lived there

Due to the name of all the three persons mentioned above ending with '*Ta*' Atrideva Vidyālaṅkār has expressed his opinion that they belonged to Kashmir[5] In fact, the tradition of ending one's name with '*Ta*' was common in all territories of Western India i e from Kashmir to Punjab, Sindh, Rajasthan, Gujarat and Malva In the 12th cent A D a minister of king Jai Singh Siddharāja who wrote Neminirvāna, Vāgbhatālaṅkāra, Chandonuśāsana was known as Vāgbhata The name of a minister of the king of Malwa was also Vāgbhata He was the father of Deveśvara and wrote Kavikalpalatā In Rajasthan also such names are found In the ninth and tenth century A D Mewar was ruled by Bhartrpatta, Mattata, Allata, Vairata etc

The first verse of salutation in *Cikitsākalikā* is an offering to the Sun (Sūrya) In his commentary Candrata has specifically mentioned that 'Sūrya' is the god of health as well as god of their family[6] In those days,worship of the sun was popular among the Hindus of Sindh and Punjab The temple of the Sun in Multan was famous throughout

the country and elsewhere As Multan is situated in the southern part of Punjab (at present in West Pakistan) on the borders of Sindh it can be assumed that the family of Tīsaṭa belonged to Sindhu Pradeśa.

Date

It has been decided that Vāgbhata lived in the latter half of the 4th cent A.D [7] Therefore we can assume that Tīsata lived in the first half of the 5th cent. A.D At that time the Guptas ruled over the major portions of India. According to Atrideva the writing of a *mañgalācaraṇa* in which the author wishes the welfare of the people, men of his profession and others was a characteristic feature of the Gupta age. Such a tradition was also followed at the end of the dramas written in the Gupta age and for the first time the same is noticed in Astāngasaṅgaraha and *Astāṅghrdaya*[8] *In the end of Aṣṭāṅgahrdaya* Vāgbhata has expressed' *Bhadrābhilāṣa*[9] i e desire for the wellbeing of the good people. In the end of *Cikitsākalikā* Tiśata — ("आस्ता चिर सद्गुणकण्ठिकेव

has also expressed a similar desire for the Vaidyas Candraṭa has followed this tradition In the end of the commentary of *Cikitsākalikā* he has expressed a similar wish for '*Ārogya*'[10]

The mention of the name of '*Bhoja*' in *Cikitsākalikā* has prompted J. Jolly to believe that Candrata lived in the 11th cent A D when the famous king 'Bhoja' ruled over many parts of India with his capital at Dhārā[11] His view is unacceptable as '*Bhoja*' mentioned by Tīsaṭa with Hārīta, Suśruta, Parāśāra, Bhrgu, Agniveśa, Caraka and others can be positively identified with a person named 'Bhoja' who was a colleague of Suśruta This fact is mentioned in the Suśruta-saṃhitā Therefore, in this context, 'Bhoja' should not be identified with the king of the 11th cent A D

In the opinion of Hoernle, Candrata lived nearabout 1000 A D Hence he believes that Tīsata, father of Candraṭa, might have lived a few decades before this period[12] According to Winternitz both Tīsata and Bopadeva lived in 13th Cent A D [13] But D C Bhattacharya believes that Candrata lived nearabout 950 A D and his father Tīsata might have been alive nearabout 900 A D [d14]

But as all the above three opinions are not based on reliable historical material these cannot be accepted

As the sequence of '*Roga-cikitsā*' outlined in *Cikitsākalikā* is altogether different from that in the *Rugviniścaya* (*Mādhavanidāna*) of Mādhavakara, we cannot accept *Cikitsākalikā* to be the work belonging to a period after 7th cent A D Several scholers have fixed 7th cent A D as the age of Mādhavakara In case *Cikitsākalikā* were a work written after Mādhavanidāna then in this the sequence of diseases, which is noticed in the subsequent works viz *Siddhavoga* (by Vrnda), *Cikitsāsaṅgraha* (by Cakrapāni) and other works should have been adopted by Tīsata But the absence of such a sequence leads one to believe that Mādhavakara must have been guided to a great extent by *Cikitsākalikā* This belief is further strengthened by the fact that in both the works the given sequence is somewhat similar e g in the beginning of the list given in

the *Cikitsākalika Jvara, Atisāra, Grahani*, and *Arsa* are found and the same order has been followed in *Mādhavnidāna* *

Cikitsākalikā

The only available work of Tīsatācārya on Āyurveda is *Cikitsākalikā*, '*Yogamālā*', *Amrtayogamālā*' and '*Yogasamuccayā*[15] are also its names In some manuscripts, this work is also called '*Tīsatasūtram*'[16], while explaining the aptness of the name '*Cikitsākalikā*', Candrata clarified that as a bud on blossoming into a flower spreads its fragrance, similarly this bud of medicine (cikitsā) would also spread its fragrance[17] It is written in verse It contains four hundred verses In his work Tīsata has also mentioned the same number[18], but in the different manuscripts available at different places the number of verses differs A few examples are given below

In the mss, preserved in Bhandarkar Oriental Research Institute, Poona the number of verses is as under

S No	*Serial No of the manuscripts*	*No of verses*
1	915/1884-87	406
2	916/1184-87	410
3	890/1887-91	402
4	214A/1883-84	412

The difference in the number of verses in the three manuscripts preserved in the branch offece of Rajasthan Oriental Research Institute at Udaipur is as shown below

S.No. of manuscript

1	492	412
2	493	425
3	494	402

Similiar position can also be seen in the published editions of Cikitsākalikā

1	Lahore edition (with commemtary of Candrata)	401
2	Kottayam edition (only original)	408
3	Ahmedabad edition (with translation in Gujarati)	408

* The author says that the order of diseases is not similar in *Mādhavanidāna* and *Cikitsākalikā* but immediately he contradicts it by saying that the sequence is somewhat similar which confirm that Mādhava has followed Tisata, why not the Vice-versa? (ed)

This is only an indication This difference is is found also in other mss preserved at different places[19]

In fact, the commentary of Tīsata's son Candrata is available on only 401 verses This is acceptable to us because Tīsata's words given above corroborates it As such the verses found in excess of the above number either in manuscripts or printed editions should be considered to be superfluous*

Among the mss available so far, the manuscript at serial number 621/1895-1902 preserved in Bhandarkar Oriental Research Institute,Poona is the oldest one It's date is Thursday. Āśvina Badi, Bahudhānya Samvatsara, Śaka Samvat 1500 (1579 A D.) The folios of this manuscript are torn, infested by white ants and have lost their original colour After this is the manuscript at serial number 493 in the Rajasthan Oriental Research Institute Udaipur (reffered to above), The date of this manuscript is Thursday, Vaiśākha Śukla 11, Vikrama Samvat 1683 (1626 A D)

Several editions of *Cikitsākalikā* have been published[20] The names of the following gods and authors are mentioned in *Cikitsākalikā.*

1.	Sūrya	(Verse 1)
2.	Aśvins	(versel 1)
3.	Dhanvantari	(versel)
4.	Suśruta	(Verse 1-2, 145, 401)
5.	Father (Vāgbhata,	(Verse 1)
6	Hārīta	(Verse 2)
7	Parāsāra	(Verse 2)
8.	Bhoja	(Verse 2)
9.	Bhela	(Verse 2)
10	Caraka	(Verse 2, 41, 317)
11	Bhrgu	(verse 2)
12	Agniveśa	(vere 2)
13	Janakātmaja (Videha)	(verse 319)

From the word '*Ādi*' in the commentary of Verse 2 Candrata has indicated the works of the following authours

1 Aupadhenava
2 Aurabhra
3 Pauskalāvata (Puskalāvata)
4 Ātreya
5 Vaitarana
6 Ksārapāṅi
7 Jatūkarna
8 Caksusyena
9 Videha
10 Nimi

Tīsata had studied the works of several authors who wrote before him on the subject[21]

* The author could not utilise the latest edition — P V Sharma Chaukhamba Surbharati Prakashan, Varanasi, 1987 This also got 401 verses

From the point of view of rhythm and meters, this work of Tīsata can be considered to be an exquisite one. Looking to the systematic arrangement of the matter it appears that in addition to his being a great scholar of Āyurveda and an efficient medical practitioner, Tīsata also possessed vast knowledge of literature and poetry.

Like his father Vāgbhata, Tīsata has also used several new and beautiful meters in his Cikitsākalikā Vamśastha, *Mālinī* and *Vasantatilakā* being prominent among them In a verse (no 397) relating to '*Vājīkaranatantra*' he has used the meter '*Puspitāgrā*' ('इति कथितमिद हि पुष्पिताग्राचरणचतुष्टयवेष्टनेन शिष्य')

Poetic embellishments may also be seen at some places

Sequence of subject matter:

Cikitsākalikā is a well balanced collection of the essence of Āyurveda In this work the author has briefly presented almost all the useful informations of Āyurveda with sound arguments

After the three introductory verses, the work can be divided into three parts-in verses 4 to 94 useful facts of Āyurvedic treatment have been given. In the next four verses (95-98) synopsis of the remaining matter is given

In this work, the eight branches of Āyurveda have been properly highlighted In the beginning, *Kāyacikitsā* has been described in detail Further the remaining branches *Śālākya*, *Śalya*, *Bhūtavidyā*, *Kaumārabhrtya*, *Visatantra*, *Rasāyanatantra* and *Vājīkaranatantra* are narrated briefly in the above order Only the medicinal treatment of the diseases of these branches are outlined in it Thus this work can be treated mainly as composition on (*Kāyacikitsā Part I, (Verses 4-94)* This is almost one-fourth of the whole work The following subjects are discussed in it

1 *Body (V 4)* It is composed of *Pañca-Mahābhūta, Sattva, Rajas, Tamas, Tvak, Dosa, Dhātu, Mala, Sirā* etc This is the location of diseases

2 *Classification of diseases (V 5-15)*

(a) of three types — *Vātaja, Pittaja, Kaphaja*
(b) of two type — *Rājasa, Tāmasa*
(c) of two types — *Kāyika* (Somatic), *mānasika* (Psychic)
(d) of three types — *Sādhya, Yāpya, Asādhyatama (Pratyākhyeya)* Their symptoms are also described
(e) of three types — *Karmaja, Dosaja, Karmadosaja*

Karmaja rogas (Diseases arisen from the past deeds) can not be cured by *yuktivyapāśraya cikitsā* (rational treatment) These disease are born from stealing, sex with teacher's wife, killing of brāhmana and other such vices

Tīsaṭa has given a list of '*Karmaja*' diseases (such a list is not found elsewhere) among which are — *udararoga, arśa, unmāda, apasmāra, pradara, vātavyādhi, śvitra, Kṣaya (śoṣa), Ksaṇadāndhatā* (night blindness), *timira* (loss of eye-sight), *mukhārśa, nāsārśa, sarvāṅgaśotha, apacīvraṇa (gaṇḍamālā-vraṇa), valmīka, kākaṇaka (mahākuṣṭha), śankhaka (siroroga) puṇḍarīka (mahākuṣṭha), raktārbuda, vraṇa, visarpa, sarvāṅga-kampa, pakṣāghāta, galagaṇḍa, galagraha, daṇḍāpatānka, vātarakta*, etc. In Candraṭa's opinion Tīsaṭācārya has mentioned these diseases in the list of *Karmaja* ones on the basis of other treatises[22]. In this context, he has quoted the stanzas from '*other tantras*'. These diseases can be cured by '*daivavyapāśraya cikitsā*' (offering to gods etc-V.13) '*Doṣja*' diseases are originated by *doṣas* (V.14). The dieseses which are however cured after the destruction of the acts of vices and *doṣas* by medicines are known as *karmdoṣaja* (V.15)

Diagnosis (Ātura-Parīkṣā): examination of a patient suffering from bodily or mental diseases should be made on the following basis:

(1) *Doṣa*
(2) *Pradeśa*
(3) *Bala*
(4) *Kāla*
(5) *Vikāra*
(6) *Sattva*
(7) *Sātmya*
(8) *Auṣadha*
(9) *Agni*
(10) *Vayas* and
(11) *Prakṛti*

The detailed examination of the above eleven factors analysed by Candraṭa in detail is not available elsewhere This analysis is extremely useful in understanding the entire basis of the pathology, diagnosis and treatment in Āyurveda

Tīsata says that after such an examination, leaving aside the treatment of *karmaja* diseases, the treatment of *dosaja* diseases should be undertaken

4 *Analysis of the characters of Vāta and other dosas (V.17)*

5 *Signs of health* (V 19)- Candrata has explained the difference in the definitions given by Suśruta and general physicians about it Tīsata has followed Suśruta

6 *Names of dhātus and malas (V 18)*

7 *Sirās and chief marmas(hrdaya,guda* and *nābhi*)(V 20-27) In the description of anatomy of the body, he has discussed the *mahābhūtas, karma, doṣas, dhātus, malas* and seven hundred *dhamanīs* or *siras* and *marmas*.

8 *Causes of aggravation of Vāta-Pıtta-Kapha, theır Symptoms and Treatment.*

(A) Causes for the aggravatıon of *Vāta-Pitta-Kapha* (V.29-32) — These verses of Tīsaṭa are very famous and always have been the most favourable of the Vaidyas By quoting them ın '*Madhukoṣavyākhyā*' (of *Mādhavanidāna) Vijayarakṣita* made them ımmortal.

(B) Symptoms of aggravated *Vāta* etc. (V.33-41). After observing these symptoms a diseases can be dıagnosed.

(C) General treatment of diseases caused by *Vāta* etc. (V.42-85)-Two types of treatment have been ındıcated.

(1) *Samśamana Cıkitsā*
(2) *Saṃśodhana Cıkitsā*

(1) *Samśamana cıktsā* (V 43-67) — whıle dıscussing the remedies for pacification of *Vāta*, *Pıtta* and *Kapha*, eıghteen gtoups of drugs have been descrıbed. The author has suggested to treat all *dosaȷa* dıseases by thses drugs These groups are —

a	*Vātaroganāśaka*	—	*Rāsnādi gaṇa*
b	*Pıttaroganāśaka*	—	*Kākolyād gaṇa*
c	*Kapharoganāśaka*	—	*Krsṇādı gaṇa*
d	*Pıttavātaghna*	—	*Sthırādı gaṇa*
e	*Kaphavātaghna*	—	*Kaṭphalādı gaṇa*
f	*Pıttakaphagna*	—	*Trāyantıkādı gaṇa*
g.	*Trıphalā*		
h	*Trıkatu*		
ı	*Pañcakola*		
ȷ	*Pañcavalkala*		
k	Elādı gana		
l	*Aṣtavarga*		
m	*Trısugandhı*		
n	*Cāturȷātaka*		
o	*Varunādı gana*		
p	*Mahat-pañcamūla*		
q	*Laghupañcamūla*		
r	*Daśamūla*		

Thırteen pharmaceutıcal forms for usıng these medıcınes have been prescrıbed These are (1) *Taıla* (2) *Ghrta* (3) *Cūrna* (4) *Kalka* (5) *Pralepa* (6) *Seka* (*Parıseka*) (7) *Avagāha* (8) *Pāna* (*Pānaka*) (9) Āsthāpana (10) *Anuvāsana* (11) *Nasya* (12) *Añȷana* (13) *Bastıvıdhı* (*Śırobastı, Uttarabastı*) These are admınıstered ınternally as well as externally

(2) *Saṃśodhana cikitsā* (V. 68-85)- The body is to be purified in order to cure diseases. By removing *doṣas* the body is purified. In this process Tīsaṭa has followed Suśruta and has first of all outlined the method of digestion for ' *āmadoṣa*'. After this, the process of *snehana, svedana, vamana, virecana, gudabasti* and nasya is outlined.

After indicating the general treatment of diseases caused by *vāta* etc the treatment of individual disease has been described. First of all two useful processes. *laṅghana* and *pathya*, have been advocated with suitable arguments and details (V 85-94)

Part II — This is the most exhaustive part and covers about half of the book. Under *Kāyacikitsā* (V.95-97, 99-297) treatment of thirty diseases has been described in the following order:-

1. *Jvara*
2. *Atisāra*
3. *Grahaṇīvikāra*
4. *Arsa*
5 *Bhagandra*
6 *śopharoga*
7 *Udararoga*
8. *Gulmaroga*
9. *Vidradhi*
10. *Galagaṇḍa*
11. *Gaṇḍamālā*
12 *Visphotaka*
13. *Slīpada*
14. *Vātarakta*
15 *Visarpa*
16. *Kuṣṭha*
17 *Kilāsa (Śvitra)*
18. *Prameha*
19. *p¯ṇḍuroga*
20 *Śvāsa*
21 *Kāsa*
22. *Raktapitta*
23 *Tṛṣṇā*
24. *Chardi*
25. *Hikkā*
26 *Śūla*
27, *Udāvarta*
28 *Mūtrakṛcchra*
29 *Rājayakṣma*
30 *Krimiroga*

As pointed out, the sequence of diseases in *Mādhavanidāna* and subsequent works is different form the above.

In the treatment of *Jvara*, fasting, hot water and Sadaṅga (medicated) water are prescribed in a proper way, curative recipes and wholesome diet are also described

Although most of the treatments outlined by Tīsata are based on old samhitās, he has also added a few formulae which are as follows -

1 *Jvara-Ārogyapañcaka kaṣāya* (107), *Anantādi yoga* (109)
2 *Atisāra-Devadārusaṭka yoga, trikārsika yoga, caturbhadraka yoga* (124), *tittiriputapāka* (132)
3 *Grahanī-bhūnimādi cūrna* (134), *granthikādya cūrna* (135-36) *bhallātakaguda* (140-142)

4. *Udararoga- rohıtakādi kaṣāya* (163), *rohıtakaghṛta* (170-171)
5. *Gulma-bındughṛta* (176-177), *mahābindughṛta* (178-179)
6. *Vıdradhı- triphalāguggulu*,tnphalāghṛta (181-182)
7 *Gaṇḍamālā, Galagaṇḍa- tumbītaıla* (184)
8 *Vısphoṭa- nımbādı kvātha* (185)
9 *Vātarakta- śilājatu-prayoga* (187)
10 *Vısarpa- khadırāṣtaka* (188)
11 *Kuṣtha- navakaṣāya* (189), *vajrakaghrta* (193) *mahākhadıraghṛta* (194-98), *ayaskrtı* (202-206)
12 *Śvitra-nīlaghṛta* (208-11), *mahānīlaghṛta* (212-15).
13. *Pāṇduroga-maṇdūravataka, vıbhītakalavana* (219-22)
14 *Śvāsākāsa-bhārṅgīharıtakī, vyāghrīharītakī, vyāghrīghṛta*
15. *Raktapıtta- vāsādı yoga* (238)
16 *Trsna- lājādıvataka* (244)
17 *Hıkkā- Use of flowers and fruıts of Pāṭalā (247).*
18. *Śūlā-hıṅgupañcaka* (248), *saptavımśaka- guggulu* (254-56)
19 *Udāvarta- gomūtrādi vartı* (257)
20 *Śoṣa- cyavanaprāśā* (there ıs some dıfference ın ıngredıents of Caraka's *cyavanaprāśa* and formula of Tīsata whıch ıs easıer Lıkewıse, *Śıvā guṭika* (270-78) (In companson to that of Vāgbhata) ıs easıer

In the end of *kāyacıkıtsā*, seventeen verses form '*saṇkṣıpta kāyacıkıtsā*' (Medıcine ın bnef) In these verses, the most useful sıngle drugs and formulatıons are mentıoned Thus thıs may be called the ' *agryasaṅgraha* (collectıon of the best ones) Further (295-297), dıvısıon of the body ınto upper, mıddle and lower, and theır dısease, and three types of remedy commonly employed ın them have been outlıned.

In the treatment of ' *bhagandara*', the surgıcal process ıs fully descnbed It ıs dıfficult to understand why thıs has been ıncluded ın *Kāyacıkıtsā*

Part III (98, 298-399) — Thıs ıs the last quarter of the book In thıs part, the remaınıng seven branches of Āyurveda are descnbed

1 **Śālākyatantra** (298-324) There are no specıfic dırectıons for technıcal work, only the formulae are gıven For the treatment of the dısease of the eye, *patolādyaghrta* (302) and *sudarśana vartı* (315) and ın *śıroroga māyuraghrta* are worth mentıonıng.

2 **Śalyatantra** (325-332) The names of dıseases ın whıch *ksāra*, *agnı*, *śastra* or *raktamoksana* ıs to be applıed are specıfıcally mentıoned For *vrana*, the use of guggulutıktakaghrta (332) ıs prescnbed

It may be observed that wıthın *śalyatantra Tīsata* has ıncluded the treatment of *vātaroga* (333-60) For the *vāta* of skın, flesh-blood and other *dhātus* blood-lettıng ıs recommended In *vātarogas*, *anuvāsana*, *abhyaṅga*, *pāna*, *parıseka* wıth medıcated oıls are consıdered useful The formulae of *śatāvarī-taıla* and *daśāṅga* taıla are worthy of mentıon here In the end, preparatıon of *Ksāra* (caustıc alkalı) for ıts applıcatıon ıs descnbed (361-364)

3. **Bhūtavidyā** (365-377) — For *bhuta-śānti, ghṛtas* and *dhūpas* are described. The use of *phalaghrta* has been considered to be effective for *bhūtas. Maṇḍūkaparṇī-ghṛta, sārasvataghṛta, daśāṅga dhūpa* and *vijaya-dhūpa* are, for the first time, described here.

4. **Kaumāratantra** (378-380) — For curing *bālātisāra*, the use of lodhra and flowers of *dhātaki* are recommended.

5. **Viṣatantra** (381-389) — *Prācetasa ghṛta* and *āstīkanāmāgada* are new recipes.

6 **Rasāyanatantra** (390-94) — After indicating the use of *bhallātakavardhamāna, pippalīvardhamāna*, gold, pure *śilājatu, pure guggulu, āmalakī* and *rasona, Tisaṭa* has given the names of some new drugs which can be used as *rasāyana These are hastikarṇapalāśā*, castor oil nimba-oil, oil of the fruits of *jyotismatī* and *suvarṇabīja*

7 **Vājīkaraṇatantra** (395-399)* In this portion, the use of six drugs- *śatāvarī nāgabalā, vidārikanda, gokṣura* and *āmalakī-* either mixed or single, has been described The recipes of powder of *nāgabalā* with honey and ghee, *cūrṇa* of *ucchaṭā* with honey and sugarcandy, of *mudgaparṇī-māṣaparnī* with honey and that of *guḍucī, āmalakī* and *gokṣura* with honey are recommended

The last recipe has been included by Vāgbhata in *Rasāyanatantra* but Tīsaṭa has included it in *Vājīkaraṇatantra*

A comprehensive commentary with observations on different topics of *Cikitsākalikā* was written by Candrata, the author's son Some portion of this commentary was first published by Jolly in 1906 from Leipzig (Germany) Along with the complete original text, it was publshed in 1926 from Lahore by Narendranath Mitra

Importance

Before *Cikitsākalikā*, '*Nāvanītaka*, was popular as a medical treatise (*Yoga-saṅgraha*) which was written before Vāgbhata. The recipes in *Nāvanītaka* are arranged according to pharmaceutical forms while Tīsata has done it on the basis of diseases Even in first glance, one can notice the following merits in Tīsata's *Cikitsākalikā* -

1 Although emphasis has been laid upon *Kāyacikitsā*, one can get the knowledge of all the eight branches of Āyurveda There is brief but deep analysis of '*hetu*' '*liṅga*' and '*auṣdha*' (*triskandha*) for the treatment of diseases

* The number of verses given in brackets relate to the Lahore edition of the text

Jolly has written that in *Cikitsākalikā* examination of pulse has been incorporated[23] but this is wrong. In all printed editions or manuscripts of this work there is no mention of *nāḍīparīkṣā*

2. There is no mention of *Rasa-yogas* in it while following the ancient tradition everywhere the author has prescribed the recipes of herbal medicines only In the treatment of diseases inorganic substances such as iron, Fuller's earth, red ochre, salt, pyrite, śilājatu, galena and gold have been used

3. About three hundred recipes are described in *Cikitsākalikā* These recipes have been very popular among the vaidyas. It appears that in this work Tīsaṭa has selected the popular and effective *siddhayogas* on the basis of his experience

4. At that time, people were showing less inclination to read and study the exhaustive and difficult works of Caraka and suśruta, Therefore Vāgbhata incorporated the essence of such works in his abridged work i.e. *Aṣṭāṅgahṛdaya*. In the field of actual practice for treatment of diseases the necssity of work in which all the important and useful doctrines and recipes are compiled in the best possible manner was felt at that time. A person had neither ability nor time to read and to teach detailed and exhaustive works on Āyurveda. Therefore Tīsaṭa's work proved to be extremely useful. Here all the aspects of diagnosis and treatment alongwith basic concepts are described

5 Tīsata has described the line of treatment of disease born out of *mānasa* and *śārīra* doṣas only He has not described *Karmaja* diseases[24]

6 In *Cikitsākalikā*, the mention of treatment with useful *ghrtas* and *dhūpas* is made under *Bhūtacikitsā* where *Daivavyapāśraya cikitsā* is not mentioned Leaving aside the traditions laid by Caraka and Suśruta, Tīsata, on the style of Vāgbhata, has classified Bhūtavidyā as a separate category In the text of Caraka and Suśruta, this branch of Āyurveda is not dealt with separately but is included in *Unmāda-Apasmāra* and other relevent chapters.

Thus it can be said that *Cikitsākalikā* authored by Ācārya Tīsata is one of the chief, ideal and popular works of Āyurveda which served as a popular handbook of practice of medicine for centuries

Candraṭa

The name of Candrata as a writer and commentator of works on Āyurveda is well known *Yogaratnasamuccaya* written by Candrata, has been quoted by many subsequent authors from time to time

Candrata was son of Tīsata and grandson of Vāgbhata In the beginning of the commentary on the *Cikitsākalikā* (of Tīsata) Candrata writes- " After paying homage with devotion at the feet of his father Candrata, an eminent Vaidya, writes the commentary on the *Cikitsākalikā*[25] Similarly in the beginning of Yogratnasamuccaya he pays respect to his

father[26]. If we accept that Tīsata lived in the first half of the 5th Cent A D then Candrata, his son, must have lived in the middle of the 5th cent. A D.[27]

Works[28].

In the end of the commentary on the *Cikitsākalikā,* Candrata himself has mentioned three works written by him[29] These works are

1 Commentary on the *Cikitsākalikā*
2 *Yogratnasamuccaya*
3. *Suśruta-pāṭha-śuddhi*

Vaidya-triṃsatikā' is also regarded as his work[30] Besides, Candrata also seems to be the author of *Yogamuṣṭi, Candraṭasāroddhāra* and *Vaidyaka-Koṣa (Dravyāvalī)*[31].

Commentary on the Cikitsākalikā

The commentary on Tīsata's *Cikitsākalikā* written by his son Candraṭa, is available. Several extracts of the commentary edited by J Jolly with German translation were published in 1906 from Leipzig (Germany). The entire work with Hindi commentary entitled '*Parimala*' written by Jayadeva Vidyālaṅkāra was published by Kaviraj Narendra Nath Mitra (Mitra Āyurvedicd Pharmacy) Lahore,1926*

In this commentary Candrata has quoted the following Authors and works on Āyurveda

1	Agniveśa	16	Pauskalāvata
2	Aśvins	17	Bhatta
3	Ārteya	18	Bhela
4	Aupadhenava	19	Bhoja
5.	Aurabhra	20	Rasavaiśesika
6	Kapilabala	21	Videha (Janak-suta)
7	Kāṅkāyana	22	Viśvāmitra
8	Ksārapāni	23	Vrddha Bhoja
9	Kharanāda	24	Vrddha Videha
10.	Caksusyena	25	Vaitarana
11	Caraka	26	Siddhaśara
12	Jātūkarnya	27	Sudhîra
13	Jejjata	28	Suśruta
14	Nimi	29	Haricandra
15	Parāśara	30	Hārīta

* The latest edition is edited by P V Sharma (Chaukhamba Surbharati Prakashan, Varanasi 1987 (ed)

In addition to the above, he has also quoted the views and opinions of some other Ācāryas and their works with the remarks — 'anye', 'tathā coktam', 'uktañca', 'tantrāntare' and 'granthāntare'

He also mentioned 'Vaiyākaraṇāḥ' and 'Kāyacikitsākārāḥ'

A perusal of the names of the authors in the above list reveals that Candraṭa has quoted the opinion of ancient authors only It helps us in determining his age.

From the point of view of preparation of medicines and their use, Candrata has based his views on ancient tradition[32] In V. 207, he has suggested the method of taking the medicine in dose as prescribed by old and experienced Vaidyas. He has explained the difference in preparation and drugs of *Satpala* and *Mahāsatpala ghṛtas* prepared for *Pañcakarma* from those used in fever (V.118)

At several places, Candrata has clearly explained the difference of opinion between the followers of Caraka (*Kāyacikitsākāra*) and those of Suśruta (*Śalya-tantrakāra*) After emesis the regimen of diet prescribed by the former is '*Peyādi*' while the latter regards it as ' *Yūsādi*'[33] Similarly the difference of views between the two on the signs of Health has been explained by him[34]

While defining the origin of '*Karmaja*' diseases, Candrata has discussed the quotations of other '*Tantra*' in an exhaustive manner which renders great help in understanding the '*Karmaja*' diseases (V.12)

For diagnosis of diseases Tīsata has advised to examine eleven factors viz *dosa*, *pradeśa*, *bala*, kāla, *vikāra*, *agni*, *vayas*, and *prakṛti* (V 16) Candrata has discussed them exhaustively (covering ninteen pages) and has given a comprehensive description of each of them In this process, he has expressed significant ideas about diagnosis and treatment of diseases and the properties of dravyas It would be relevant to highlight some of the important points in this discussion

Candrata has described three types of bala (strength) — *bala*, *ojas*, and *tejas*. The finest portion of the '*dhātus*' is known as '*bala*', *tejas* is an '*āgneya*' substance living in abdomen in the form of fats particularly in women while *ojas* resides in heart *Rasavaiśesika* has given three types of *bala*-*Uttama* (superior) *madhyama* (medium) and *adhama* (inferior) Caraka has classified the three types as *Sahaja*, *Kālaja* and *Yuktija*

Candrata has extensively quoted *Kharanāda* for classifying the characteristics of diagnosis

In the ' *Sattva-parīksa*, two types of *Sattva-Bhirutā* (impatience) and *Sahisnutva* (patience) are mentioned Similarily there are four types of *Sātmya-dehasātmya*, *rtu-sātmya*, *rogasātmya* and *deśasātmya* *Kharanāda* has classified it in six categories- *dosa*, *prakṛti*, *deśa*, *rtu*, *vyādhi* and *okaja* Similar are the six types of

Asātmya Sātmya is also divided into eight categories- *Jāti* (birth), *Roga*, *Atura Dhānya*, *Rasa*, *Deśa*, *Ṛtu*,and *Udaka* In *Rasavaiśeṣika* one ' *Sārvakālika sātmya* is mentioned for all people which means that it is suitable for all times Besides, there are many kinds of *sātmya* which maintain health and do not give rise to diseases Such an elaborate and clear exposition of *Sātmya* is perhaps not available elsewhere

Candraṭa has recognised three types of remedy- *hetuviparīta*, *vyādhi-viparīta* and *tadarthakarī*. *Which is again of two types- hetvarthakārī* and *vyādhyarthakārī The word ' auṣdha'* means ' drugs'. In this context, Candrata has given a meaningful and exhaustive discussion of the *Materia Medica* in Āyurveda., By predominance of particular *bhūta* the drug (*dravya*) is ' *pāñchabhautika*' According to *Rasa*, *Guṇa*, *Vīrya*, *Vipāka* and *Prabhāva*, it is of several types Further it is described as of three types — *Dosapraśamana Dhātupradūṣaṇa* and *Svasthavṛttopayogī* Treatment is also of three types: *daivavyapāśraya*, *yuktivyapāśraya* and *sattvāvajaya* Treatment, which depends upon body (śārīracikitsa) is also of three types- *antah-parimārjana*, *bahih-parimārjana* and *śastrapranidhāna*

The place of Agni is *nābhi* For this he has quoted the opinion of *tantrāntara* (other tantra).

Prakṛti is called nature (or constitution). It is inherent (ādibalapravṛtta). Seven, five, and sixteen types of Prakṛti have been described

For treatment of eye disease, Candrata (V 313) has described three different kinds of *añjana-guṭikā*, *rasa* (*rasakriyā*) and *cūrna* There are three kinds of *gutikā-pinda*, *varti* and *gutikā* Again *añjana* is of three kinds — *lekhana*, *ropana* and *prasādana lekhana* is of five kinds — *amla*, *lavana*, *katu*, *tikta* and *kasāya Ropana* is of two kinds- *kasāya* and *tikta* While defining *kāyacikitsā Candraṭa* has given two different views — "कायशब्देनाग्निरभिप्रेत "

"दोषधातुमलादिसघात काय तस्य ज्वरादिभिर्व्यापन्नस्य चिकित्सा कायचिकित्सेति"

In this context, the following view of *Vrddhabhoja* quoted by Candrata is not available elsewhere

"तममिम कायमेवाग्नि प्रवदन्ति मनीषिण । योऽय निर्दहति क्षिप्रमाहार सर्वदेहिनाम् ।। अनादिमध्यनिधन सर्वतन्त्रेषु पठ्यते। प्रभालक्ष्यसमायुक्तो जीव स हि सनातन ।। यस्त चिकित्सेत्सीदन्त विषम मन्दमेव वा। आयुर्वेदनियोगेन स वै कायचिकित्सक ।।"

Thus in his commentary, Candrata has expounded several important doctrines and ideas. A commandable synthesis of the doctrines expounded in scriptures, tradition and actual practice is discernible in his commentary

Yogaratnasamuccaya

At several places, the name '*Candrata-sāroddhāra*' is also given to this work This work is still unpublished

In the beginnıng of the work, Candrata has offered salutatıon to Dınakara (Sūrya), Aśvins and Tīsaṭa, hıs father According to Candrata, he had wrıtten thıs treatıse by collectıng nectar-like essence from the ocean of Āyurveda[35]

Manuscripts.

The followıng manuscrıpts of thıs work are preserved ın Bhandarka Oriental Research Instıtute, Poona (1) MS No 147/A 1882-83 There are 229 folıos and sıx parts ın ıt. In part 2 *gadaśāntyadhīkāra*, *pañcakarmādhıkāra* and *kalpādhıkāra* are included whereas they should have come at the end of the work Part 3, 4, 5 and 6 are, ın fact, parts of *gadaśāntyadhıkāra* However, ıt can be treated as a complete manuscrıpt It was wrıtten ın Udaıpur (Rajasthan) ın V.S 1815 (1759 A.D.) ın the reıgn of Mahārānā Raj Singh II The manuscrıpt was completed on Sunday Bhādrapada Pūrnımā ın thıs year The last colophon of the work ıs as follows

"इति श्रीतीसटसुतश्रीचन्द्रटविरचिते योगरत्नसमुच्चये कल्पाधिकार. ।। समाप्तोय योगरत्नसमुच्चय ।। संवत् 1815 वर्षे भादवा 15 रवौ इद पुस्तक षात्री उदेभाण लिखिक पुत्र षेतो ।। उदेपुरनगरमध्ये राणा श्रीराजसीघजी ।। शुभं भवतु ।।"

(2) MS No 1072/1886-92 There are 26 folıos ın ıt In thıs manuscrıpt only the portıon of Cūrnādhıkāra ıs avaılable

"ओ नम श्री विघ्नराजाय नम ।। श्रीयोगरत्नसमुच्चये चूर्णाधिकार प्रारभ्यते ।"

In thıs work one hundred twenty two recıpes of *cūrna* are gıven The manuscrıpt appears to be suffıcıently old one

Besıdes the above two manuscrıpts, I have personally seen four other manuscrıpts of thıs work The fırst two are preserved ın Anup Sanskrıt Lıvrary, Bıkaner, third ın Sahıtya Samsthan, Rajasthan Vıdyapeeth, Udaıpur and the fourth one ıs avaılable ın the collectıon of Rajasthan Orıental Research Instıtute, Jodhpur

Of the manuscrıpts preserved ın Bıkaner, ın the fırst one (S No 4182) there are 153 follıos It contaıns the text from the begınnıng to bastıvıdhı

The text ın the begınnıng

श्री गणेशाय नम । श्री शारदाय नम । श्री धन्वन्तराय नम । भक्त्या प्रणम्य दिनकरमुद्योतितसकलदशदिग्भागम् । वैद्याश्विनौ मुरेन्द्रौ भिषग्वरतीसटपितरम् ।। उद्धत्यामृतवत्सारमायुर्वेदमहोदधे । क्रियते चन्द्रटेनैव योगरत्नसमुच्चय ।। घृततैलचूर्णगुटिकावलेहगदशातिकर्म्मकल्पाख्यै । अधिकारै प्रत्येक वसुसख्यैर्भूषितो भुवने ।। अभयाहरितकीवाचिकी शिते भरुरण्वनिजपीत । लोको गतानुगामी मद्विहिते नादर याति ।। तस्मादसिन्नयासमुच्चयैर्विरचितो न्यथा पाठ । परहितकरणसमुद्भवशुतफलमात्र हि न साध्यम् ।। योगरत्नसमुच्चये घृताधिकार आरभ्यते ।"

The second manuscript (S.No. 4183) has 19 follios. In fact, this ms. begins after the end of the first one. It appears to be written by somebody else. This work is upto *Kalpādhikāra*. The last portion runs as follows:

"मासोपयोगेन वरांगनाभिर्मासद्वयेनैव तु पक्षिणिभिः। मासत्रयं यः पुरुषः प्रयुंक्ते ह्रियेते विद्याधरसुन्दरीभि.॥ वारित्रातमघाग्रनागराजोग्रवीर्य उरग इव वयस्थो वानुसम्प्रदिष्ट.। भुजगसदृशदृष्टि. सप्तहेमावदातः सुरतरतिरवार याति नारी प्रभूता॥ चाणक्यप्रोक्तकुष्ठकल्पः समाप्त·।"

By combining the above two manuscripts, it becomes a complete copy of the *Yogratnasamuccaya*.

It appears that at the time of preparation of the Catalogue of the collection of this Library by Rajendra Lal Mitra (in May 1880) perhaps both these manuscripts were combined in one. In his catalogue at S No 1451 it has been mentioned as '*yogratnasamuccaya-candrikā* and the total number of folios are shown as 178 but now if we add the number of folios of both the manuscripts the total comes to 172. Perhaps six folios were subsequently lost The present Catalogue was prepared by Dr. C. Kunhan Raja and K Madhava Krishna in 1947 A D.

In the collection at Sahitya Samsthan, Udaipur an incomplete ms (S No. 34) of *Yogratnasamuccaya* is available Several folios of the ms in the beginning are missing It was written in V.S. 1744 (1687-A D) It contains the whole of *Kalpādhikāra* There are only 32 folios in it.

Beginning·

"अथ पचकर्माधिकारानंतर कल्पाधिकार आरभ्यते। हिमवत्यमरावासे दिव्यौषधिसमाकुल। गधर्वयक्षाध्युषिते नानाधातुविचित्रते॥ विश्वसृग्भगवान् सृष्टा मार्त्तण्ड भास्कर किल। भ्रममारोपयामास रूपहेतो कदाचन॥ कृतवान् कनकप्रख्यं रूप जनमनोहरं। विरूपसकलास्तेभ्यो ये पेतुर्गिरिमूर्द्धनि॥ तेभ्यस्तेजस्विनो जाता वेतसा नाम पादपा.॥ न हि तेषु विलीयते पतंगा न सरीसृपा। तेषा फलेभ्यो निर्यास सोऽम्लत्वादम्लवेतस॥ मासोपयोगेन वरागनाभिर्मासद्वयेनैव तु यक्षिणीभिः। मासान्नय य. पुरुष· प्रयुक्ते ह्रियेत विद्याधर-सुन्दरीभिः। वरिषशतमविघ्न नागराजोग्रवीर्यस्तुरग इव वयस्थो वेगवान् संप्रहृष्टः। भुजगसदृशदृष्टिसप्तहेमावदात सुरतरतिरिवायथाति नारी प्रसूता। इति चाणक्यप्रोक्तकु (ष्ठक) ल्प। इति श्री तीसटसुतश्रीचन्द्रटविरचिते योगरत्नसमुच्चये कल्पाधिकार समाप्तोय योगरत्नसमुच्चयः।"

The text upto this stage is in the hand-writing of one person Thereafter a different person has written the folloing two lines

"सवत् 1744 वर्ष चैत्र शुदि॥ रविवासरे राजश्रीपुरोहित श्री गरीबदासजी पठनार्थं पुस्तकं॥ श्री॥ लिषत इद पुस्त० अमरेण॥"

At S.No 4816 and 8662 two mss of *Yogratnasamuccaya* are available in the collection of Rajasthan Oriental Research Institute, Jodhpur The ms at S.No 8682 is incomplete, 130 folios in the beginning and a few folios in the end are missing On the last page it is written

"इति तीसटसुतचन्द्रटविरचिते योगरत्नसमुच्चये गदशांत्यधिकारे विषशान्त्यधिकारे विषतन्त्रं समाप्तं ॥ छ ॥
अथातो रसायनतन्त्रं व्याख्यास्यामः ॥ छ ॥"

Other mss. of the text are also avaılable in the followıng Lıbraries:

1	S No. 64	Bır Lıbrary, Kamthandu
2	S No. R 3182	Oriental Manuscrıpt Lıbrary, Mysore.
3	S No. G 5168	Asiatic Socıety Lıbrary, Calcutta.
4.	S No. B 4282	Banaras Hındu Unıversıty Lıbrary, Varanası

In the ms preserved at Varanası the fırst folıo ıs mıssıng and ıt runs upto folıo number 234 The portıon at the end ıs also ıncomplete It contaıns the matter from *Ghrtādhıkāra* ın *Mukharogacıkıtsā*

Thus of the above ms only those preserved at Poona and Bıkaner are complete

As thıs work ıs a valuable contrıbutıon on Ayurveda the edıtıng and early publıcatıon of the same ıs needed

Contents

In this work, there are eıght *Adhıkāras* (chapters) as follows

1	*Ghrtādhıkāra*	2.	*Taılādhıkāra*	3	*Cūrnādhıkāra*
4	*Gutıkādhıkāra*	5	*Avalehādhıkāra*	6	*Gada-śāntyadhıkāra*
7	*Pañca-karmādhıkāra*	8	*Kalpādhıkāra*		

Thus ıt ıs vast and old collectıon of formulatıons (*Yogas*) All the ' *Yogas*' (recıpes) compıled ın ıt are borrowed from ancıent treatıses of Āyurveda There ıs no Rasayoga ın ıt In the *gadaśāntyadhıkāra* the treatment of dıseases ıs descrıbed In the *Kalpādhıkāra* the followıng nıneteen *kalpayogas* are descrıbed -

1	*Amlavetasa-kalpa*	2	*Suvarna-kalpa*
2	*Cıtraka-kalpa*	4	*Kākamācī-kalpa*
5	*Śatāvarī-kalpa*	6	*Bhallātaka-kalpa*
7	*Harītakī-kalpa*	8	*Trıphalā-kalpa*
9	*Laśuna-kalpa*	10	*Gudūcī-kalpa*
11	*Śılājatu-kapla*	12	*Guggulu-kapla*
13	*Vārāhı-kapla*	14	*Kukkutī-kapla*
15	*Erandataıla-kalpa*	16	*Kumkuma-kalpa*
17	*Gokṣura-kalpa*	18	*Alambusā-kalpa*

The quotations from the following ancient works and authors are found in *Yogratnasamuccaya*[36].-

1. Agastya
2 Agniveśa
3 Acyuta
4 Amitaprabha
5 Amrtakumbha
6 Amrtaprabha
7 Amrtaprabha
8 Aśvinīkumāra-samhitā
or Aśvinīsamhitā
9 Ātreya
10 Āryasamuccaya
11 Aupadhenava
12 Kāṅkāyana
13 Kālapāda
14 Krsṇātreya
15 Ksārapāni
16 Kharanāda
17 Gopura (Gopuraraksita)
18 Caksusyena
19 Caraka
20 Cikitśakalikā
21 Cikitsātiśaya
22 Cikitsāsāra
23 Jātūkarnya (Jatūkarna)
25. *Dravyāvalī*
24. *Tīsata*

26 Dhanvantari
27 Nāgārjuna
28 Nāvanītaka
29 Parāśara
30 Bindusāra (Bindu-Bhatta)
31 Bhadravarman
32 Bhadraśaunaka
33 Bharadvāja
34 Bhāluki
35 Bhisaṅmusti
36 Bheda (Bhela)
37 Mahendrakalpa
38 Yogayukti
39 Rudrasena
40 Vāgbhata (Vāhada)
41 Vrddhavāgbhata (Vrddhavāhada)
42 Videha
43 Vrddhavideha
44 Vaitarana
45 Śālihotra
46 Śaunaka
47 Śivasiddhānta (Śaiva-siddhānta)
48 Siddhasāra
49 Suśruta
50 Hārīta

Nāvanītaka and *Siddhasāra* are Buddhist texts and are of much relevance In *Yogaratnamuccaya*, seventeen yogas of *ghrta*, *taila*, *cūrna*, *gutikā* and avaleha are quoted from *Nāvanītaka*

Siddhasāra was written by Ravigupta son of Durgagupta * In *Cikitsākalikā-vyākhyā* (V 81) and *Yogaratnasamuccaya* it has been quoted several times

Revision of Text of the Suśruta-Saṃhitā-

On the basis of Jejjata's commentary, Candrata had revised the text of the *Suśruta-samhitā* In the end of it, Candrata has written as follows

"सौश्रुते चन्द्रटेनेह भिषक्तीसटसूनुना। पाठशुद्धि कृता तन्त्रे टीकामालोक्य जैज्जटीम्॥"

* See Ch on Medicine in Buddhist and Jaina traditions

Hoernle and Jolly have mentioned about this revision of the Suśruta text in a ms preserved in the India office Library, London A copy of the revised text of the *Suśruta-saṃhitā* by Candrata has been seen by me in Rajasthan Oriental Institute, Udaipur (S No 18o6 (3) This manuscript is too old and cotains 40 folios It was copied in 1464 V S (1407 A D) on Sunday Caitra Sudi 8 In this ms only '*Kalpasthāna*' is available The last colophon of the text is as follows

"इति सौश्रुते चन्द्रटेनेह भि० ॥ सौश्रुते आयुर्वेद शास्त्र शास्त्रे कल्पस्थान समाप्तमिति ॥ 6 ॥ सवत् 1464 वर्षे चैत्र शुदि 8 रवौ कल्पस्थानं उपाध्याय दामोदरसुतमोकेन लिखित ॥ 6 ॥ श्री श्रीमालजातीय ॥ 6 ॥ पंचम कल्पस्थान समाप्त ॥ सख्या 65 ।"

Thus by producing these valuable works on Āyurveda, Candrata has made his name immortal in the history of Indian Medical Science

Date of Tīsata and Candrata has fixed by the author in the assumption that they were related to Vāgbhata as son and grandson respectively but this very assumption has no base as Tīsata has nowhere mentioned Vāgbhata though in salutary verses he has referred to his father If this were a fact, he would have mentioned his father's name explicity as Candrata did in his works It proves that though Candrata was definitely Tīsata's son, Tīsata was not Vāgbhata's son As regards mention of Tīsata as the son of Vāgbhata, it may be taken as transcriptor's creation or utmost this Vāgbhata may be different from the author of AH Moreover, Candrata in *Yogratnasamuccaya* and comm on the *Cikitsākalikā*, has quoted *Siddhasāra* which is a work of 7th Cent A D and as such could not have lived two centuries before him On these grounds, the relation of Vāgbhata (the author of AH) and Tisata as father and son purposed by the author can't be acceptable

According to *Niścalakara*, *Cakrapānidatta* (11th Cent A D) has utilised the Tīsata's work as one of his sources Candrata mentions Jejjata (9th Cent A D) Thus Tīsata-Candrata may be placed between 9th and 11th e g 10th Cent A D which is corroborated by majority of the scholars (see paper on Vāgbhata)

When the relation of Vāgbhata — Tīsata as father-son is disproved the conjecture about Tīsata-Candrata's residence based on that automatically collapses (editor)

REFERENCES

1 Atrideva Vidyalankara, ' *Āyurveda kā Brhat Itihāsa*' P 250

2 Aufrecht, " *Catalogus Catalogorum*', Part 1, P 559

3 भिषग्वरो वाग्भट इत्यभूनमे पितामहो नामधरोऽस्ति यस्य ।
सुतो ऽभवत्तस्य च सिहगुप्तस्तस्याप्यह सिन्धुषु लब्धजन्मा ॥ (AS U 50 132)

4 समधिगम्य गुरोरवलोकितात् गुरुतराच्च पितु प्रतिभा मया ।
सुबहुभेषजशास्त्रविलोकनात् सुविहितो ऽङ्गविभागविनिर्णय ॥ (AS U 50 133)

5 Atrideva Vidyalankara, op cit

6 आदौ सूर्यनमस्कार शरीरारोग्याय, उक्तञ्च' आरोग्य भास्करादिच्छेत्' ।
तथा कुलदेवताऽस्माकम् । कुलदेवता- त्व सतु तत्तेज.समुत्पभत्वात् । (Candrata)

7 Hari Shastri Paradkara: *Vagbhata-vīmarša*

8 Atrideva Vidyalankara. op cit, P 251

9 भिषजा साधुवृत्तानां भद्रमागमशालिनाम् ।
अभ्यस्तकर्मणा भद्रं भद्रं भद्राभिलाषिणाम् ॥ (AH U 40 77)

10. आरोग्य तेन गच्छन्तु सन्त· सन्मार्गगामिन । (Candrata on Concluding V.2)

11. J Jolly, Indian Medicine, Poona, 1951 (ed C G Kashikar), P 7

12. A F R Hoernle, Osteology (*Studies in the Medicine of Ancient India*, Part 1), Oxford 1907, P- 100

13. M Winternitz- *History of Indian Literature*', Vol. III, P 675

14. D C Bhattacharya, ' New Light on Vaidyaka Literature', *IHQ* Vol 23, June, 1947

15 कृता चिकित्साकलिकेति योगैर्माला सरोजैरिव तीसटेन
(V 1 also V 3, Candrata's introductory remark and comm on V 3)

16 In colophon of MS S No 915/1884-87 preserved in Bhandarkaa Oriental Research institute, Poona written as follows 'इति श्रीतीशतसूत्र समाप्तम् ।'

17 यथा पुष्पकलिका विवृत्पत्रकेसरा प्रभूतगन्धामोदरख्यापिका, एव चिकित्साकलिकाप्यतिचिकित्सामोदवेदिका
(Candrata on V 1)

18 But this verse is not found in the ms (of V S 1683) preserved in RORT at Udaipur

19 See my paper ' Tīsatācārya Aura Unakī Cikitsākalikā' *Sachitra Āyurveda*, August, 2966, pp 77-82

20 Published editions of *Cikitsākalikā*

1 Edited By J Jolly- In ZDMG Leipzig, Germany 1906 pp 413-68, with extracts from Candrata's commentary as well as German Trans

2 Edited and published by Kaviraj Narendranath Mitra, Mitra Āyurvedic Pharmacy Lahore, V S 1983 (1926 A D) with Candrata's Sanskrit commentary and Jayadeva's Hindi commentary named ' Parimala'

3 Edited by Vayaskara N S Moos, Vaidyasarathy Press, Kottayam, 1950 only original text

4 Edited by Rasiklal J parikh with Gujarati Translation, Sastum Sahitya Vardhaka Karyalaya, Bombay-2, and Bhadra, Ahmedabad, 1st ed 1974 2nd ed 1982,

5 Edited by P V Sharma text with Candrata's comm and Eng translation, Chaukhamba Surbharati Prakashan, Varanasi, 1987

21 तीसटाचार्येण भूरिग्रन्थदर्शनात्, द्वयमपि पठितम्। (Candrata on V 185)

22 कर्मजत्व चैषा दृष्ट्वा शास्त्रान्तरेषु तीसटाचार्येण चोक्तम्। (Candrata on V 12)

23 J Jolly, Indıan Medıcıne, Poona, P 7

24 नानाप्रकारपवनादिगदातुराणामुक्त चिकित्सितमिदं न तु कर्मजानाम्। (V 16)

25 तीसटसूनुर्भक्तया चन्द्रटनामा भिषङ्मतश्चरणौ। त्वा पितुश्चिकित्साकलिकाविवृतिं समाचष्टे॥

26. भक्तया प्रणम्य दिनकरमुद्योतिसकलदशदिशाभोगम्। वैद्याश्विनौ सुरेज्यौ भिषग्वर तीसट पितरम्॥ See Colophon 'इतिश्रीतीसटसुतश्रीचन्द्रटविरचिते योगरत्नसमुच्चये कल्पाधिकार.।'

27 See author's paper ' Candrata Aura Unakī Vaıdyaka Krtıyan', Swāsthya, August, 1974, Page 457-461

28 Ibıd

29. चिकित्साकलिकाटीकां योगरत्नसमुच्चयम्। सुश्रुते पाठशुद्धिश्च तृतीया चन्द्रटो व्यधात्॥

30 C G Kashıkar, supplementary Notes, (Englısh Trans) of Indıan Medıcıne' by J Jolly) Poona, 1951), P 192

31 Prıya Vrat Sharma, ' *Āyurveda Kā Vaıjñanıka Itıhāsa*' Chaukhamba Orıentalıa, Varanası, 1975, P 209

32 कलिङ्गषट्कमिति पूर्वाचार्यसंज्ञेयम् (126), ता (पिप्पल्य) बलवद्भिश्चूर्णिता मध्यबलैस्त्क्वथिता पातव्या इति सम्प्रदाय' (115)

33 एक पेयदिक्रम कायचिकित्सकाना मत इति। शल्यतन्त्रकर्तृणा सुश्रुतादीनां यूषादिक्रमोऽभिप्रेतः (80)

34 सुश्रुताचार्येणाप्यष्टलक्षणमुक्त स्वास्थ्य-समदोष इत्यादि। कायचिकित्साकारैश्च पञ्चदशलक्षण स्वास्थ्यमुक्तम्। (19)

35 भक्तया प्रणम्य दिनकरमुद्द्योतितसकलदशदिशाभोगम्। वैद्याश्वनौ सुरेज्यौ भिषग्वर तीसटं पितरम्॥ उद्धृत्यामृतवत्सारमायुर्वेदमहोदधे। क्रियते चन्द्रटेनैष योगारत्नसमुच्चय.॥ (1–2)

36 P K Gode, ' Works and Authors mentıoned by Candrata ın hıs compendıum *Yogratnasamuccaya* (c A D 1000)' *Studıes ın Indıan Lıterary Hıstory*, Vol I, Bharatıya Vıdya Bhawan, Bombay, 1953, PP 132-137

9.7

NĀGĀRJUNA

K.R. SRIKANTA MURTHY

In ancient India, we come across the name of "Nāgārjuna" in many contexts There are about a hundred books professing his authorship [1] Every orientalist worth his fame has his own views on the identification of this great personality The Nāgārjuna problem is thus the gordian knot of Indian history

To point out the complexities of the problem the context in which Nāgārjuna's name appears are listed hereunder along with the views of modern scholars.

1 Nāgārjuna — as the great propagator of Mahāyāna sect of Buddhism, propounder of Madhyamaka Philosophy (*Śūnyavāda*), author of many books (about 24) on that subject, highly respected in India, China and Tibet and considered as the 13th *Bodhisattva;* friend of a great Śātavāhana king, travelled widely in North India including Kashmir, participated in religious debates, finally spent his life at Amarāvatī and Śrīparvata (Śriśaila) Many other details about his life and works (some reliable and some unreliable) are also available

2 Nāgārjuna — as the author of a large number of books on Tantric Buddhism Not much of personal information is available, apart from what these texts furnish which are not very reliable

3 I-tsing, the Chinese pilgrim, in the memoirs of his travel in India mentions Nāgārjuna as a contemporary of king Kaniska Kalhana also says so in his *Rājataranginī*

4 *Tibetan sources and Mañjuśrīmūlakalpa*, a scripture of Tantric Buddhism, say that Nāgārjuna got the stupa at Amarāvatī reconstructed and adorned with ornamental railings Archeological and historical evidences suggest that the work has been done between 150 to 200 A D [2] Hence this Nāgārjuna has to be assigned to 2nd-3rd cent A D

5 Kutūhala in his book '*Līlāvatī-Parinaya* mentions a Bhiksu Nāgārjuna' and the preceptor of the Śātavāhana king Hāla (19-24 A D)

6 Nāgārjuna as the author of *Rasa — kaksaputa*, *Rasendramangala* and many more books on Alchemy (*Rasāyana*), Kautuka-cintāmani etc , on magic, *Lohaśāstra* (metallurgy) and *Ratiśāstra* (erotics)



Nāgārjuna
(Courtesy Indian Institute of History of Medicine, Hyderabad)

7 Nāgārjuna — as a student and later the abbott of Nālandā University As a disciple of Saraha, the Tantric teacher and preceptor of Na-ro-pa who later became the Head of that University and as one among the Siddhas of Buddhist religion of Tibet Naropa's discipled Māra-Pā became Head of the Vikramaśilā University

8 Al-Biruni, the Persian traveller, who visited India in 1030 A D , writes that a Nāgārjuna, a native of fort Daihak near Somnath (in Gujarat) a famous representative of the art of ***Rasāyana*** (Alchemy) and author of a book, lived about a hundred years before his time

9 Nāgārjuna — as one among the twentyfour *Kāpālikas* of Śaiva Siddha tradition mentioned by *Śābara-tantra, Goraksa-siddhāntasangraha* etc as one of the great propounders of *Hathayoga* mentioned in *Hathayogapradīpikā,* as a great adept in *Rasāyana* (Alchemy) alongwith *Vyādi, Kāmbala* and *Indrabhūti* — mentioned in *Navanāthacaritra*

10 Nāgārjuna — as the redactor of an important treatise of Āyurveda — the *Suśruta-saṃhitā,* also as the supplementor of the Uttaratantra (last section).[3]

11. Nāgārjuna — as the author of Yogaśataka, which according to Itsing, the Chinese pilgrim, is an abridged version of another popular text on medicine; it deals with all the eight branches of Āyurveda and contains a Uttaratantra (last section) like Suśruta-saṃhitā.

12 Nāgārjuna — as the author of *Arogyamañjarī, Vārtāmālā, Yogasamvāda/ Yogamañjarī, Yogamuktāvalī, Yogaratnamālā* and *Nāgārjunīya*[4].

13 Bhadanta Nāgārjuna — the author of *Rasavaiśeṣikasūtra*. It deals with the Pharmacological dectrine of Sadrasas (six tastes) of Āyurveda It has been published. Its editor places the text and its author in 7th cent. A.D [5] It is to be noted that the epithet '*Bhadanta*' was reverential term applicable to great teachers/scholars, specially among the Buddhists. An inscription below the feet of a Buddha image found at Jaggayyapeta of Guntur district of Andhra Pradesh mentions Bhadanta Nāgārjuna as a teacher[6] This inscription is assigned to about 500 A D. Hence this Bhadanta Nāgārjuna should be placed in about 400 A.D

14. Nāgārjuna — as the sister's son of Pūjyapāda, the Digambara Jaina Philosopher, alchemist of Karnataka belonging to 8th cent. A.D [7] This Nāgārjuna embraced Philosophies, *Tantra* and *Rasāyana* (alchemy); travelled all over Himalayas Nepal and Tibet, participated in many debates, finally came to Andhra country and settled in Śrīśaila hills. The king of the country became his friend. Nāgārjuna attained great success in *Rasāyana* (Alchemy) and could convert any substance into gold He wrote many books on this science *

Modern scholars find it difficult to presume this Nāgārjuna as an important person and consider this as a case of fusion of personality.

The above description succintly points out the difficulties and confusion about one or many Nāgārjuna. The confusion has resulted from many reasons such as the sources of information are spread over three ancient cultures — Indian, Tibetan and Chinese — each agreeing on certain points and disgreeing on certain others, the Indian tendency of amalgamating one personality with another, silence of authors about their personal data, the greed of insignificant men to pass on their writings in the name of great men, absence of sufficient epigraphical and archeological evidences, inadequate historical and literary research on this subject by modern scholars etc

Even with many shortcomings and inaccuracies modern historians and orientalists have been able to sketch the life and works of the following four *Nāgārjunas* *

* For legends about Nāgārjuna see Bhagwan Dash Tibetan Medicine with special reference to Yogaśataka, Ch IV, pp, 54-61 (ed)
For Jaina Nāgārjuna see R P Bhatnagar Jaina *Āyurveda kā ithāsa*, Udaipur, 1984

* "Most likely the Buddhist philosopher, the Tantra writer, the medical writer and the alchemist were four different men" Winternitz *A History of Ind Literature*, Vol II, p 331-32

I. Nāgārjuna — Bodhisattva — (1st-2nd cent A.D)

He was born in brāhmana family of a place Vedali in the province of Vidarbha (Berar) which was a part of ancient Andhra country in South India He studied the Vedas and śāstras of brāhmanical learning Not satisfied with these, he embraced Buddhism, studied all its scriputres, became a monk, wandered in the Himalayas in quest of more knowledge There he met an old Buddhist monk, with whom he studied the Mahāyāna doctrines He participated in many debates at many places and vanquished many Buddhist and non-Buddhist scholars. He realised then that the Mahāyāna doctrines lacked the much needed logic to substantiate its doctrines and that even the doctrines required revision At this time he was met by a Mahānāga (great serpent/great scholar/a scholar of Nāga tribe) who gave him the *Vaipulya-sūtra* (probably *Prajñāpāramitā Sūtra*) After a deep study and meditation, Nāgārjuna propounded a new Philosophy — the *Madhyamaka* doctrine of Śūnyavāda and propagated it through his writings and debates In later life he moved to South India, stayed for some time at Dhānyakataka (Amarāvatī in Guntur district of Andhra) The great king of the Andhra country — the Śātavāhana (either Gautamīputra Śātakarni (106-130 A D) or Yajñaśrī (174-203 A D) became his friend and disciple, both of them were contemporaries of Kaniska II, Nāgārjuna got the Amarāvatī Stupa reconstructed (this has taken place between 150 and 200 A D.) by his royal friend and also got a new monastry constructed on the nearby Śrīparvata (Śrīśaila mountains) where he spent the rest of his life.

His new doctrine became greatly popular not only in India but also in Tibet and China Some of his books were translated into Chinese language Nāgārjuna came o be considered a Bodhisattwa, 13th in the line A Chinese scholar — Kumārajīva (4th cent A D) wrote a Biography of Nāgārjuna and also translated some of his books

More than 25 books profess the authorship of Nāgārjuna Among them the most important are *Mūlamādhyamika-Kārikā* — his *magnum opus*, *Mahāprajñapāramitā-śāstra*, *Vigraha-Vyāvartinī*, *Dvādaśamukha-śāstra*, *Ratnāvalī* and *Suhrllekha*

Nāgārjuna had many disciples among whom Āryadeva was the chief, who is considered in Chinese tradition as the 14th Bodhisattwa Both Nāgārjuna and Āryadeva lived together at Śrīparvata The two teeth contained in a large jar found during excavations at Nāgārjunakonda (in 1938) are said to be probably Nāgārjuna's relics[8]

Some other points of general agreement are —

1 Nāgārjuna is the second name after he became a monk, though explained variously as 'born under a Arjuna tree and protected by serpents" "valiant as a serpent" and "the one perfected by serpents" etc , his getting scriptures from a Nāga, supports the acceptance of the meaning "One perfected by serpents or enlightened by a Nāga scholar" is more acceptable People known as Nāgas were ruling in North India near Mathura, Central India (Maharastra) etc , during the 1-2nd cent A,D

2 His books do not contain any features of Tantra or *Rasāyana* (Alchemy) These subjects developed at later centuries and were incorporated into Buddhism after the 4th cent A D. only. So books dealing with Tantric Buddhism and Alchemy must be the works of another Nāgārjuna Similarly, treatises on medicine (Āyurveda) also cannot be ascribed to him

3 This Nāgārjuna cannot be associated with Nālandā University as that Institution was established later, only in 4th cent only

II Nāgārjuna — The Bhiṣak (4th-5th cent. A.D.)

He is the person who redacted the famous Āyurvedic treatise — the *Suśruta-samhitā* and also added the *Uttarastantra* (last section) to it This work having been completed before 550 A D , the period of composition of *Astāngahrdaya* of Vāgbhata, this Nāgārjuna has to be assigned to 4th-5th cent A D (the Classical period of Indian history or the Gupta age) Modern scholars of Āyurveda opine that most probably he and Bhadanta Nāgārjuna, the author of Rasavaiśesika-sūtra are one and the same[9] and that other Āyurvedic treatises Viz , *Yogamañjarī Yogaśataka, Vārtāmālā* and *Nāgārjunīya* — are also his works* The *Jaggayyapetta* inscription lends support to this presumption Except *Yogaśataka,* none of the other books is available now

No details about his personal life are known It is beyond doubt that he was a Buddhist monk, belonging to Mahāyana (*Madhyamaka*) sect, a reputed scholar in Āyurveda who had established a tradition of his own which had many followers, known as Nāgārjunīyas[10] (interpreters of *Suśruta-samhitā*) In all probability it is this Nāgārjuna who produced Lauha-śāstra and got a famous recipe (Nāgārjuna-Varti — an eye salve) inscribed on a pillar at Pataliputra for the benefit of the sick[11]

III. Nāgārjuna — The Tantric (7th cent. A.D.)

The existence of a large number of Buddhist texts, bearing the name of a Nāgārjuna as their author, which by internal and external evidences can not be assigned to a period earlier than 7th cent A D has necessiated the presence of another Nāgārjuna

These texts have incorporated certain features of Tantric practices such as worship of divinit.es like *Avalokiteśvara, Mahāmāyūri, Mañjuśrī, Tārā* etc , emphasis on *Dhyāna* (meditation) combined with *Yoga, Mantra* (magical and secret chants) and even *Rasāyana* (Alchemy) Tantric Buddhism with all these elements came to be known as Vajrayāna which became quite popular in India and Tibet after Indrabhūti These texts do not furnish any information about the personal life of their author in reliable terms

Upāya-kauśalya-hrdaya is also an important treatise of this author

* Tanjur records the following works of Nāgārjuna — *Yogaśataka, Jīvasūtra* or *Vaidyajīvasūtra, Avabhesaja-Kalpa, Aryarājanāmu vatikā* and *Arya mūlakosa — mahausadhāvalī*
(Bhagwan Dash Op cit , int, pp 9-11) (ed)

IV. Nagarjuna — The Alchemist (8-9th cent. A.D.);

He is the author of *Rasendramangala, Kakṣapuṭa-tantra, Yogaratnamālā,* and many other books in magic, *Rasāyana* (Alchemy) and *Ratiśāstra* (Erotics) Internal and external evidences, the fairly advanced state of alchemy found in these texts etc go to prove that they belong to a period between 8th and 10th cent A D Buddhist Siddha accounts from Tibet and accounts of Nāthasiddha tradition of South India state that Nāgārjuna who hailed from South India was a great master of Alchemy and wrote many books on that subject He is said to have studied at Nālandā University as a disciple of Sarahapa, a Tantric teacher He later became the abbott of that University. He mastered that science of Rasāyana (Alchemy) Yoga, Tantra and magic He travelled widely, took part in religious and scientific debates, and came to be called as a *Siddha*. In his later life he resided at a fort (hill top) monastry near Śrīśaila hills in Andhra country. (The place on the banks of the Krisnā river derived his name and came to be called as Nāgārjunakoṇḍā) In all probability, it is this Nāgārjuna who is mentioned by Al-Biruni, the persian travellor Likewise, it is he who is said to be a contemporary of the scholars of Vikramaśilā University.

In addition to the above four personalities the possibility of existence of some more Nāgārjuna, real or pseudo, cannot be ruled out *

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2 Sastri Nilakantha K A — *History of South India,* Madras, 1966 p 447

3 Dalhana — Commentary on *SS* 1/1-1

4 Vijayaraksita mentions *Ārogyamañjarī* (MN 6/6), Śrīkanthadatta mentions *Vārtāmālā* (VM 15) and *Yogasamvāda* or *Yogamañjarī* (VM 6/14) Mss of *Yogamuktāvalī* and *Yogaratnamālā* No 1047 and 1060 respectively are with C C R A S , New Delhi Gayadāsa mentions *Nāgārjunīya* (SS Ni 3/12)

5 Menon Sankara K *Rasavaiśesika-sūtra,* Introduction

6 Murthy Sacchidananda K, *Nāgārjuna* p 14 National Book Trust India, New Delhi, 2nd ed 1978

* In the salutary verse, the author mentions his teacher Bhāskara *(Jayanti gurubhāskarāh bhuvane)* Both Bhāskara and Nāgārjuna are present in the list of Siddhas enumerated in the introductory verses of the *Rasaratnasamuccaya* (ed)

* One Nāgārjuna is quoted by Dalhana (SS U 7 11-12) as expert in Toxicology (ed)

7 Devacandra *Rājāvalikathā*, a Jaina treatise in Kannada
Sastri, Nilakantha K A *History of South India* p 447, Madras 1966
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10 **Ibid**
11 ***Sharma*** P V op cit p 479

9.8

COMMENTATORS ON CLASSICAL TEXTS

B. RAMA RAO

Bhaṭṭāra Haricandra (BH) (6th cent. A.D.)

Bhattāra Haricandra also known as Haricandra or sometimes Bhattāra is the author of *Carakanyāsa,* the earliest known commentary on *CS* This commentary is available only upto third chapter of *Sūtrasthāna* and was published from Lahore by Pandit Mastanātha Śāstrī Bhattara Haricandra is mentioned as *gadyakavi* by Bānabhaṭta and Vākpatirāja Some scholars accept the identity of these two authors while some have doubts eulenbeld thinks them different Vallabhadeva (15c) and Śrīdharadāsa (13c.) cited his verses in Svbhāsitāvalī and Saduktikarnāmrta respectively Pādatāditaka, a work of Gupta period, refers to a Physician called Haricandra who belonged to Bāhlīka region and was the son of Īśānadeva and of Kāṅkāyana *gotra* and who visited Pātaliputra for the treatment of a courtesan In *CS* also a Bāhlīka Physician called Kāṅkāyana is referred to as participating in several seminars It may be possible that during that time the descendants of Kāṅkāyana mingled with the local population and settled in India and BH may be one of their descendents *Viśvaprakāśakosa,* a work written by Maheśvara, mentions *BH* as the court-poet of king Sāhasāṅka Maheśvara is the seventh descendent of Haricandra On the basis of this Yadavji places BH to the period of Chandragupta II (375-413 A D) identifying Sāhasāṅka with Vikramaditya I PVS suggests that it is more reasonable to place him in 6c by identifying Sāhasāṅka with Yaśodharman (6th cent A D).Thus he becomes contemporary to VB I and by that time *CS* was already revised by Drdhabala and attained the present form BH was probably a resident of Ujjayinī which was the seat of royal power He prayed Sūrya in the beginning of his commentary and Ujjayinī is famous for Sun worship and Sun temples Some verses are missing after the first verse and the next verse is in praise of Caraka On the basis of a remark by Indu in his commentary, DC states that he wrote a revised version of *Kharanādasamhitā* He is also of the opinion that BH wrote a Samhitā of his own which is not identical with *Kharamādassmhitā* and from which Niścala quotes separately Further a passage from Niścala proves that BH himself quotes from Kharanāda According to DC a recipe taken by Niścala from BH must be from the own samhitā of BH BH might have written this Samhitā for this patron king Sāhasāṅka

BH lived before JJ and after *Kharanādasamhitā* Neither BH referred to VB nor VB referred to BH, probably they were contemporary Thus he lived before 600 The editors of CS Jamnagar edition, state the date of BH as 5th Cent A D disagreeing the identification of Sāhasāṅka with Candragupta II, since BH is not mentioned among the nine gems of Vikrama's court Meulenbeld is not sure about the correct date and allots him between 400-600 But the reference of BH by CP shows that he commented on Drdhabala's portion and must be later than Drdhabala

For some centuries, his commentary had a good hold and was supposed to be a must A verse in a manuscript of the commentary on AS praises the commentary of Haricandra stating that attempting to understand CS without help of the commentary of BH is to drink up the ocean But the references of Indu show that he had not much respect for the views of BH Candrata in his commentary of Tīsata's *Cikitsākalikā* extols BH that it is a vain bid to attempt to comment on Āyurveda when there are already commentaries of BH and JJ BH was a versatile scholar not only in Āyurveda but also in Nyāya and other systems of philosophy The method of his treating the subject of *tantrayukti* established this

According to one statement, his commentary is known as *Śisyopādhyāykanyāsa* which indicates he was a teacher of Ayurveda

Svāmikumāra (7th cent A D)

Svāmikumāra or Svāmidāsa wrote Carakapañjikā on CS Such names were prevalent during Gupta period Śikharasvāmī was the Prime Minister of Candragupta II. Carakapañjikā follows Carakanyāsa of BH This suggests that Svāmikumāra might have been a contemporary or lived nearer to BH JJ quotes Svāmikumāra which places him in 7th cent A D PVS states that Svāmikumāra belonged to Ujjayini, on the basis of the quotation in Caturbhānī which mentions Skandasvāmī of Avanti (Ujjain) Svāmikumāra was a follower of Saivism and mentions Caraka as a Śaiva and identifies him with Patañjali PVS identifies Svāmikumāra with Skandasvāmī and Kumārasvāmī because Skanda and Kumāra are synonyms DL referred to Pañjikākara in singular number in about 19 places which may refer to Svāmikumāra Svāmikumāra himself accepts that he made critical study of BH before writing his own commentary on CS Thus he is posterior to BH and anterior to JJ who quotes him He was probably a contemporary of BH The word Pañjikā means that which gives accurate record to verse and meanings there-in registered after an investigation This is quite conforming to the Pañjikā of Svāmikumāra who mentions thus after a critical study of BH's Carakanyāsa which illuminated the minds of the learned sages, Svāmikumāra has taken up the work with the wonderful passages made easy and recorded as Pañjikā This work starts with the invocation of the blessings of Lord Śiva and then homage is paid to Caraka and BH

It is interesting that he pays homage to Caraka before the important deities and sages related to Āyurveda namely Brahmā, Prajāpati, Asvins, Indra, Bharadvāja, Ātreya etc

Patañjali (8th cent A D)

Patañjali is known as the author of *Carakavārttika* and another work *Siddhāntasārāvalī* He seems to be different from the grammarian Patañjali who wrote *Mahābhāsya* He is little earlier than Āsādhavarman since Āsādhavarman has pointed out some defects in the Vārttika of Patañjali

Jejjaṭa

Jejjata commented on Bṛhattrayī, i e , *CS, SS* and *AH* Haridatta Shastri edited (published from Motilal Banarasidas, Lahore in 1940) the incomplete commentary, Nirantarapadavyākhayā,of JJ on *CS* The commentary of JJ appears to have been very popular, since the later commentators profusely utilised it From his commentary it appears that apart from Kashmir recension of *CS* there was a Saindhava (Sindhi) recension also

The orthography of the name JJ varies widely according to different books and manuscripts

Jajjata	—	The colophons of the commentary of *CS*
Jarjata	—	AS, Trichur edition
Jejjata	—	Gayadāsa on SS, CP, DL, VR, Vācaspati, Hemādri etc
Jejjhata	—	DL at some places
Jejjada	—	NK
Jaijjata	—	SS with DL's commentary edited by Jīvānanda Vidyasagar 1889, Hoernle
Jaijjhata	—	Jolly
Jaiyyata	—	Dasgupta
Jada	—	Gayadāsa's commentary on SS*

The letters Ja and Ya are interchangeable and hence the name Jajjata and Jayyata may indicate the same person The famous grammarian Kayyata is the son of Jayyata Since the name of the grandfather is given to grandson, Jayyata is accepted as the son of Kayyata On the analogy of the names Kayyata, Mammata and others ending in '*ta*' JJ is considered a Kashmiri The comparison of the views of Kashmir and Sindhu regions also supports this There is a popular verse regarding VB which describes him teaching disciples like Indu and JJ the autheticity of this verse is doubtful JJ quoted VB II as the author of AH and Bhattāra Haricandra which takes him to a later period Candrata (10th cent A.D) corrected the readings of the text of SS on the basis of his commentary on "Tisatā's *Cikitsākalikā* S S candrata refers below in the beginning of his comm on as there exist commentaries of Haricandra and of the learned JJ, it is a sheer presumptuousness for any one else to comment on the texts of Āyurveda" Vṛnda (9th cent A D) also quotes JJ in his *Siddhayoga*

The upper limit of JJ is 6th Cent A D during which flourished BH who is quoted by JJ P V Sharma and G P Sharma on the basis of certain internal evidences fixed the date of JJ as 9th or early 10th Cent A D Hemaksīrī is explained by JJ as Kaṅkustha These two were taken as separate drugs by the time of DL, Similarly *mūrvā* and *pīluparnī* were different but later were treated as synonyms He also quoted the *aupaniṣada* section of Kāmāsūtra of Vātsyāyana (4th cent A D) and also artificial means for sexual satisfaction He quoted one verse from *Rugviniścaya* of Mādhava

* Gayadāsa, in his Nyāyapañjikā, has mentioned Jejjata sarcastically as 'Jada' (idiot) at many places (SS Ni 6 14, 7 24) (ed)

without giving his name Dharmakīrti's *Pramānavārttika* is also quoted. Both these belong to 7th cent A D Hence JJ lived in the early part of 9th cent A.D

In this commentary on *CS*, Jejjata stated that he was the disciple of Mahājahnupati Śrī Vāhaṭa Mahājahnu is identified with Majhanda in the present Pakistan by DC But it is difficult to identify this VB with the author of AH or AS JJ always referred VB by his name only without any prefix or suffix like *ācārya* or *pāda*, which was the usual practice. Even the name where he mentioned himself as the disciple of Vāhaṭa only Śrī-Vāhata is mentioned which creates doubt whether JJ was a student of Vāhata

His commentary is useful in solving the controversies regarding certain drugs and in deciding their identity For a few plants only he has given the botanical characters He furnished information about the habitat of drugs growing at other places and also different views on the identity of the drugs In a few cases, he has given local names of the drugs also However, he was not an expert in the knowledge of drugs This is explained by his explanation of *nimbakolaka* as *nimba* and *śāla* as *Śālasāra* This appears to be incorrect since *Kolaka* is a separate drug He attaches importance to *Prāktana karma* i.e actions in the previous birth, as the cause of disease

Some scholars view JJ as Buddhist while others as Vedic. The basis is that he is the disciple of Buddhist scholar VB and a statement of DL quoting JJ refuting the existence of God But these are not tenable, It is not undoubtedly established that JJ was the disciple of VB and the statement of JJ denying the existence of God can be on the basis of Śaṅkhya philosophy which is the main basis for Āyurveda

JJ referred to the following authors and books in his *Nirantarapadavyākhyā* apart from Vedas, Manu and some grammarians 1 Suśruta 2 Drdhabala 3 Jatūkarna 4 Kṣārapāni 5 Dāruvāha 6 Hārīta 7 Śivasaindhava 8 Āsādhavarman 9 Bhattāra Haricandra 10 Bhela 11 Vaisnava 12 Himadatta 13 Svāmidāsa 14 Bhoja 15 Parāśara 16 Vaisnava 17 Paitāmaha 18 Celladeva 19 Agniveśatantra 20 Bhāluki-tantra

Sukīra

Sukīra is often mentioned with Sudhīra (*SS* U 58 64, madhukosa, int verses) He wrote a commentary on *SS* and is mentioned among the earlier commentators by VR

Sudhīra

The names of Sukīra-Sudhīra appear together as a compound word in the commentaries of VR and DL A verse of Candrata mentions that it would be presumptuous for any one to attempt to comment on Āyurveda when the commentaries of Haricandra, JJ and Sudhīra are extant In this verse the word Sudhīra is interpreted by some of refer to Sudhīra the commentator and by others as an adjective to JJ meaning

Āṣāḍhavarman

Parihāravārttika is a commentary on *CS* by Āsādhavarman who is quoted by JJ, CP and NK.

Himadatta

Himadatta or Sarvahitamitradatta wrote commentaries on *CS* and *AH* and is mentioned only by JJ probably these commentaries went into oblivion in a short time.

Celladeva

Calladeva wrote a commentary on *CS* and is mentioned by JJ

Vaiṣṇava

JJ mentions a commentator on *CS* called Vaisnava

Kṣīrasvāmidatta

JJ and Cakrapāni quote Ksīrasvāmidatta who wrote a commentary on *CS* called Carakavārttika and hence he is known as Vārttikakāra

Śiva-Saindhava

Śivasaindhava, a commentator on *CS*, is mentioned by *JJ and CP*

Suvira*

Suvīra wrote a commentary on *SS*, the commentary is quoted by DL and NK The statement of NK suggests that he was earlier to Gayadāsa DL always mentions him before Jejjata and as such he is earlier then JJ e g in 8th cent A D

Nandī

Nandī wrote a commentary on SS Yogasārasaṅgraha, on which Pūrnānada wrote a commentary, is also known as the work of Nandīguru The preceptor of Ugrādityācārya, the author of Kalyānakāraka, is Śrīnandī It is difficult to say whom DL refers to

Varāha

Varāha is also a commentator on *SS*, he is mentioned by DL among early commentators

* Survīra, Nandī and Varāha — the three together are mentioned by DL as early commentators and before JJ (SS Ni 13 3, Ka 8 5-6)

intelligent Most probably it refers to the commentator Sudhīra whose commentary should have been very valuable to be at par with that of BH and JJ. Citations of DL suggest that Sudhīra commented on SS also and also that he had independent views on dietetics particularly the compatability or otherwise for ulcers in contrast with that of Gayadāsa and JJ. Sudhira is mentioned with the prefix 'Vaidya', DL and Candraṭa refer him with appreciative words However, Sudhīra followed the views of Kārtikakuṇḍa. The date of Sudhīra may be fixed around 9th Cent A D since he is mentioned by Candrata (10th Cent. A.D)

Mādhava

Mādhava wrote *Suśrutaślokavārttika* or *Praśasahasravidhāna*. This work in verse deals with thousand questions and it is quoted by NK. DL quotes *Suśrutaṭippana* of Śrīmādhava Dasgupta views both the works by one author Mādhava probably wrote a commentary on CS also. VR includes Mādhava among the early commentators

Amitaprabha

Candrata and NK mention Amitaprabha who wrote Nyāsa on CS. NK mentions him as earlier than CP

Bhadravarman

Bhadravarman commented on CS and is mentioned by CP and Candrata

Candranandana

Candranandana wrote Padārthacandrikā on AH and also wrote Gananighantu* He is quoted by DL The Padārthacandrikā commentary was translated into Tibetan between 1013-1055 A D He quotes Siddhasāra of Ravigupta (7th cent A D) and himself is quoted by Ksīravāmin as medical lexicographer (11th cent A D) and hence placed in 10th cent A D by PVS Candranandana was the son of Ravinandana or Ratinandana He was a native of Kashmir and wrote the commentary at the instance of Śakunadeva The identity of the authors of the commentary and Nighantu (lexicon) is accepted by Cordier and PVS but DC and others have doubts about it

Candranandana may be identical with Candrābhinandana who assisted Vairocana in translating the four tantras in Tibetan
10th cent A D

Candraṭa

Candrata was the son of Tīsatācārya the author of *Cikitsākalikā* He wrote a commentary (vivrti) on his father's work and also compiled a work

* Also known as Madanādinighantu (Pub (1) N S Mooss (ed) Kottayam, 1985, (2) Bhagwan Dash *Materia Medica of Indo-Tibetan Medicine*, Classics India Publication, Delhi, 1987 (ed)

Yogaratnasamuccaya He probably also wrote Yogamustı, and Vaıdyakakosa (Dravyāvalı) He also revısed the text of SS on the basıs of the commentary of JJ Thıs places hım in 10th cent A D

Bhāsadatta

Bhāsadatta ıs quoted by CP and wrote a commentary on *CS*

Brahmadeva

Brahmadeva commented on *CS* and *SS* and ıs quoted by CP, DL SD, Hemādri and Śivadāsasena Hıs commentary on *SS* ıs known as *Tıppana* Hoernle ıdentıfıes Brahmadeva wıth Brahma, the father of Maheśvara who compıled Vıśvaprakāśa He supposed that Brahmadeva mıght be posterıor to Gayadāsa because DL observes ın hıs commentary that Brahmadeva follows Gayadāsa's opinıon Gode dates him between 900-1100 A D Meulenbeld opınes that hıs date should be between Vrndakunda and CP, ıf all references to Brahmadeva as a commentator on *CS*, *SS* and Sıdhyoga relate to one and the same person

Bhīmadatta

Bhīmadatta was a commentator on *CS* and ıs mentıoned only by CP

Aṅgiri

The commentary of Aṅgırı on *CS* ıs mentıoned by CP

Īśvarasena

Īśvarasena ıs mentıoned after Vakula by Vıjayaraksıta ın hıs commentary 'Madhukosa' The order ın thıs lıst ıs supposed to be based on convenıence of metre and ıs not chronologıcal However, Cakrapānı's lıst appears to be chronologıcal and ın thıs lıst the order ıs Aṅgırı, Saındhava, JJ and Īśvarasena Thus Īsvarasena ıs later than JJ Bhattacharya consıders the lıst of NK alos chronologıcal and hence he lıved after VB He was the son of Sıddheśvarasena Apart from thıs, no other bıographıcal detaıls are avaılable The word *sena* suggests that he mıght have haıled from Bengal He was a contemporary of Gadādhara and also probably of Kārtıkakunda He was ınfluenced by the prıncıple of Tantrayuktı whıch was predomınant durıng the perıod

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10 EIGHT DIVISIONS OF AYURVEDA

10.1

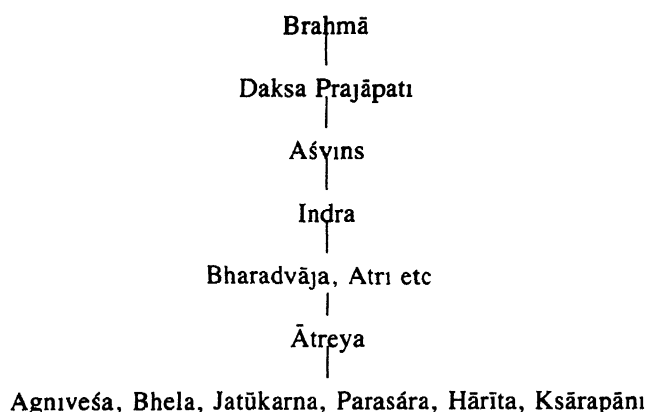
TRADITION OF ĀYURVEDA: EVOLUTION AND GROWTH

S.K. MISHRA

History of medicine in India begins from pre-historic times In fact, the knowledge of medicine (Āyurveda) is eternal and it is not possible to trace its beginning If the origin of Āyurveda is said it is only its manifestation in the form of precepts and understanding.[1]

Caraka traces the advent of Āyurveda from Brahmā, the Creator, Himself who by recollection it delivered to Daksa Prajāpati He again transmitted this knowledge to Aśvins who taught it to Indra From Indra, the sages Bharadvāja, Atri etc. received the knowledge as it was from whom Punarvasu Ātreya received it Ātreya Punarvasu had six disciples — Agniveśa, Bhela, Jatūkarna, Parāśara, Hārīta and Ksārapāni to whom the knowledge of medicine was delivered by him On the basis of Punarvasu's teachings, all of them composed their compendia of which that of Agniveśa (Agniveśa-tantra) was the first and the topmost one [2]

Table-I (According to Caraka)



Suśruta goes a step further and says that Brhamā delivered Āyurveda even before creation His preachings were composed in a Samhitā which consisted of one lac stanzas arranged in one thousand chapters In the *Suśruta-samhita,* the tradition of Āyurveda is the same as in *CS* except that here Divodāsa, king of Kāśī, received the

knowledge from Indra and delivered it to his disciples — Suśruta, Aupadhenava, Vaitarana, Aurabhra, Pauskalāvata, Karavārya, Gopuraraksita etc They all composed their treatises of which that of Suśruta was the foremost As stated in *SS* this tradition founded by Divodāsa Dhanvantari is mainly surgical while that of Ātreya is the school of medicine[3]

Table II (According to Suśruta)



A similar anecdote is found in the *Kaśyapasaṃhitā* (Vi. 1 10) where Kaśyapa leads the other three sages (Vasiṣṭha, Atri and Bhrgu) to Indra [4]

In the *Aṣṭāṅgasaṅgraha* (*SU* 1 6-9) of Vāgbhata, however, Ātreya Punarvasu leads Dhanvantari, Bharadvāja, Nimi, Kaśyapa, Ālambāyana etc Evidently here the exponents of all the eight branches of Āyurveda are included of which Kāyacikitsā is predominant[5]

In the *Aṣṭāṅgahrdaya* Vāgbhata has followed Caraka [6]

There is another tradition described in the Brahma-Vaivarta Purāna (ch 16) according to which Prajāpati, the lord of creation, after going through the four Vedas — Rk, Yajus, Sāma and Atharva — and keeping their ideas in mind produced Āyurveda as the fifth Veda and delivered it to Bhāskara, the Sun-god Based on this Bhāskara composed his own treatise (*Bhāskara-samhitā*) and transmitted the knowledge to his sixteen disciples who again composed their treatises This tradition is evidently based on the idea that the Sun was considered to be the custodian of health (*Ārogyam Bhāskarādicchet*) He is invoked in *Rgveda* for curing many diseases His twin sons, Aśvins, probably imbibed his tradition also Later on, Sun-worship was resorted to particularly in cases of chronic illness [6a]

A clear-cut tradition which has not been fully traced in any text is that of Lord Śiva who commands respect since pre-historic times In Indus valley civilization he is depicted as the Lord of animals (*paśupati*) and in *Yajurveda* (16 5) he is mentioned as the first divine physician (*prathamō daivyo bhisak*) The Siddha medicine in South

and *Rasaśāstra* in North trace their origin from the tradition of Siva. Thus a separate Śiva's tradition should also be recognised.

All this shows that the knowledge of life and its preservation have been coming down since eternity The different traditions, ·f analysed, would show the three phrases of gradual development of this science

1. Brahmā-Dakṣa — Pre-vedic
2. Aśvins-Indra — Vedic
3. Bharadvāja-Ātreya — Post-Vedic

The relation of Āyurveda to other Vedas is also not defined though attempts have been made. Some say it as the Upaveda of *Rgveda*[7] while others take it as that of *Atharvaveda.*[8] Caraka, though not mentioned it explicitly as Upaveda of Atharvaveda, has clearly expressed his inclination towards it because of its extensive dealings in medicine[9]. Similarly Suśruta mentions it as 'Upāṅga (sub-part) of the *Atharvaveda.*[10] All this confusion is because of the fact that Āyurveda is eternal and '*apauruṣeya*' (superhuman) in the same way as the other Vedas and as such it is not possible to decide the posteriroity of Āyurveda to any of them Perhaps to ventilate the same idea, it has been said as the fifth Veda 'The Fifth' does not mean that it was the last of all coming out of one of the mouths of Brahmā after the other four Vedas were already delivered but was revealed from all the four mouths simultaneously and thus having essence of all of them Naturally, in this situation, to attach Āyurveda to any one of the four Vedas is technically not possible. It is only for the purpose of convenience and traditional approach that it has been connected with the *Atharvaveda* In the form of folklore tradition, it has been coming since eternity, Āyurveda is mentioned first among Vedas in *Padmapurāna* (1 18 57)

There is an interesting discussion on relating of Atharvaveda to the other Vedas in the *Kaśyapasamhitā* It proceeds — 'It is said that Āyurveda relates to the *Atharvaveda* Some say that it is attached to all Vedas as it contains prose, verse, anecdotes and songs But it is not so In fact, on the contrary, all Vedas depend on Āyurveda, as the thumb dominates over all the four fingers of the hand and stands above them in spite of being in the same hand, likewise is the position of Āyurveda among the other Vedas where it stands as the ffith one As in other Vedas so in Āyurveda, welfare of the person is considered alongwith the promotion of Trivarga (*Dharma, Artha* and *Kama*) Thus it has the same nature (*vedatva*) as the other Vedas Secondly, as even the most learned ones not knowing the place (and the path leading to it) follow that who knows it, likewise, in case of sufferings, the knowers of all the Vedas run to Āyurveda only Hence we say that Āyurveda is the fifth one among *Rk, Yajus, Sāma* and *Atharvaveda* It is further supported by the fact that a diseased person needs amelioration of his sufferings first and then only the activities relating to *Dharma, Artha, Kāma* and *Moksa* can proceed'[11]

Eight Specialities of Āyurveda

Though indications of these topics are found even in Vedas, it is difficult to say when actually they were founded as definite specialities As these are described categorically in the Samhitās of Caraka and Suśruta, it is certain that it took place right before the Samhitās were given the present shape In Purānas it is mentioned that divisions of Āyurveda took place in *Dvāpara* [12] The credit for this has been generally given to Dhanvantari[13] While *Vāyupurāna* (54 22) says that Bharadvāja is the founder of science and art of medicine and he, after organising it into eight specialities, delivered it to his disciples

As the mention of these specialities is found in all the Samhitās, it seems probable that the specialities were defined right from the very beginning, in post-vedic period, when Saṃhitās were composed It is testified by the fact that treatise were composed on all of them by the experts in respective fields almost in the same period.

The eight *Angas* of Āyurveda are as follows —

1 *Śalya* (Surgery) — deals with removal of foreign bodies including abnormal foetus, application of instruments, alkali, cautery and diagnosis (and treatment) of surgical diseases (abscess etc)

2 *Śālākya* — deals with the diseases of supraclavicular parts such as eye, ear, nose, mouth etc

3. *Kāyacikitsā* (General Medicine) It deals with general diseases such as fever, innate haemorrhage, consumption etc

4. *Bhūtavidyā* — it deals with treatment of patients afflicted with gods, Demons etc. with pacifying measures

5. *Kaumārabhrtya* — It deals with management of child, wet-nurse, purification of defective breast-milk and treatment of diseases caused by affected milk and seizures

6 *Agadatantra* (Toxicology) — It deals with diagnosis and treatment of animal bites and other poisons

7 *Rasāyanatantra* — It deals with prevention of ageing, promotion of life-span, intellect and strength and alleviation of disorders

8 *Vājikaranatantra* — It deals with removal of the defects of semen and sexual stimulation [14]

The above description is according to Suśruta The nomenclature of two *Angas* is different in *CS* though the number of *Angas* is the same [15] Caraka has used

'*Śalyāpahartrka*' for '*Śalya*' which indicates that the extraction of foreign bodies was the main problem to be dealt with rather than dealing with surgical disorders, Similarly, for '*Agadatantra*' there is '*Visagaravairodhikapraśamana*' (that which treats toxic conditions like *Visa, Gara* and *Vairodhika*) which indicates that in the initial phase the name of this branch was not defined and confirmed

Agadatantra is also named as '*Visatantra*'[16]

In Nāgārjuna's Yogasataka (V 5) Vājīkarana has been replaced by Pañcakarma[17] probably due to ascetic reasons Narahari in his *Rājanighantu* (20 42) enumerates the following eight Aṅgas giving first position to '*Dravyābhidhāna*' (*Nighanṭu*) — *Dravyābhidhāna, Nidāna, Kāyacikitsā, Śalya, Śālāya, Bhūtavidyā, Agadatantra* and *Kaumārabhrtya*

As said above, there were several treatises on every speciality most of which are now lost and known only from their quotations in commentaries They are as follows —

Kāyacikitsā — Besides the six treatises of Agniveśa etc , *Kharnādasamhitā, Viśvāmitrasaṃhitā, Agastyasamhitā, Atrisamhitā, Māndavyasaṃhitā, Dāruvāha* or *Darukasamhitā, Bharadvājasamhitā* and *Aśvinikumārasamhitā*

Śalyatantra — Apart from the treatises of Suśruta and his colleagues, *Bhojatantra, Bhālukitantra, Kapilatantra* and *Gautamatantra*

Śālākyatantra — *Videhatantra, Nimitantra, Kāṅkāyanatantra, Gārgyatantra, Gālavatantra, Sātyakitantra, Śaunakatantra, Karālatanra, Caksusyatantra* and *Krsnātreyatantra*

Kaumārabhrtya — Besides KS, treatises of Jīvaka, Parvataka, Bandhaka and Hiranyāksa

Agadatantra — *Kāśyapasamhitā, Ālambāyanasamhitā, Uśanahsumhitā, Sanakasamhitā, Lātyāyanasamhitā* and *Brhasapatisamhita*[18]

Kharanāda or *Khāranādi Samhitā* is quoted extensively in comms Indu (on AS Ka 8) states that it is said as the work of Bhattāra Haricandra Keśava in his *Siddhamantra* (V 5) and *Vopadeva* in its comm has quoted it Gode has fixed its date as 650 A D and that of the comm as 850 A D (ABORI, XX, Pt I and IV, Poona Orientalist, Vol IV) but as it is quoted by Drdhabala (CS Ci 28 66) it can't be later than 5th cent A D

Certain names in the tradition stood as symbols of the speciality such as Ātreya (*Kāyacikitsā*), Dhanvantari (*Śalya*), Nimi (*Śālākya*) Kāśyapa (*Agadatantra*) and Kaśyapa (*Kaumārabhrtya*) In Buddhist circles, the name of Jīvaka became a legendary one symbolising both physician and surgeon

The Samhitās, by nature, contained all the angas emphasising and giving more space to the speciality which they belonged to For instance, Suśruta's emphasis and more coverage is for *Śalyatantra*. Caraka gives more importance to *Kāyacikitsā* and has given it the first position while enumerating the eight angas Kaśyapa declares the importance of Kaumārabhṛtya and says it as *'Adya Anga'* (first part) He supports this statement by saying that the experts of other specialities treat the person only when he is gorwn up under proper care of the pediatrician Moreover, child requires particular drugs, dosage and remedial measures.[19]

The tradition of Āyurveda is a divine one not only in the sense that it was revealed by the creator himself and preserved by Indra, the Lord of gods, but also because it was strengthened and further developed by the divine intellect and vision of the seers Methods were devised to consolidate and develop the traditional knowledge. These were *Adhyayana* (study), *Adhyāpana* (teaching) and *Tadvidya-saṃbhāsā*[20] (discussion with experts). Traditional knowledge was acquired fully by studying deeply and in all aspects — theoretical as well as practical Teaching was the method by which, on one side, knowledge of the teacher is confirmed and stimulated for further development and, on the other side, it is transmitted to the future generation so that it continues unabated. The third method of discussion with experts removes doubts and widens and heightens the horizon of knowledge Caraka has described the method of *Sambhāṣā* (seminar and symposia) in detail which is necessary to eliminate ignorance and arrive at truth after scientific enquiries There is documentation of a number of such seminars held in differnet parts of the country on different topics [21] In such seminars generally a participant initiates the discussion by proposing his own view The other participant refutes it with arguments and proposes his own view In this way, discussion advances with arguments and counter-arguments At the end, the Chairman concludes by synthesising and summarising all the views The discussion on the origin of person and disease (*CS SU* 25) is an ideal one

The great Universities existing at that time played a vital role in preserving and advancing the ancient tradition The University at Takṣaśilā was at the peak during Buddha's time which produced illustrious experts like Jīvaka and had teachers like Ātreya [22] Kāśī was also an important centre of learning in Āyurveda as testified by the description of the *Suśrutasamhitā* where Divodāsa Dhanvantari, the king of Kāśi, taught the students in his *'Āśrama'*. This centre probably was specialised in surgery [23] Another University of International repute was at Nalanda where Medicine was one of the five compulsory subjects taught [24] The University at Vikramaśilā flourishing under the Pāla Kings probably also had arrangements for teaching medicine though records are not available in this respect From Nālandā and Vikramaśilā the scholars alongwith medical texts migrated to Tibet and thus Indian tradition of Medicine was implanted there Nālandā University had a large number of students from China and other Asian countries and thus they also carried the Indian tradition in their respective countries along with them

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3 *SS. SU.* 1 3,10-12, 20, 4 9
4 *KS.* Vi 1 10
5 *AS. SU* 1.6-14
6 *AH SU* 1 3-4
6a Sāmba, Krsna's son, was relieved of leprosy by Sun-worshhip (see Sāmbapurāna Ch. 24).
7 Bhāgvata 3 12 37-38
8. AS. SU. 1 10
9 CS. SU 30 21
10 SS. SU 1 6
11 KS. Op. cit
12 Vāyu-Purāna 40 23
13 Visnu 4.8.7; Bhāgavata 2 7 36, Mārkaṇḍeya 55 53
14 *SS. SU.* 1 7-9
15 *CS. SU.* 30 28
16 *SS SU* 45, AH U 38 (Colophon)
17 *Śārīra-netra-vranaropanāni visānī bhūtāni ca bālatantram Rasāyanam pañcavidham ca karma astāngam āyuh kathayanti vaidyah*
18 Sen G N *Pratyaksaśārīra,* int pp 17-37, P V Sharma AVI p 170-171 Regarding *Māndavya,* G N Mukhopadhya (HIM, III, 867-68) collected references only from the texts of *Rasaśāstra* but could not see that in *AS SU* 1 13 where he is mentioned among the authors of *Kāyacikitsā*
19 *KS* op cit
20 *CS* Vi 8 6-15, also SS SU 2-4
21 Ibid SU 1,12,25,26, Sa, 3,6, Si 11
22 Mahāvagga, VIII (*Jīvakakkandhaka*)
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10.2

KĀYACIKITSĀ (GENERAL MEDICINE)

V. NARAYANASWAMI AND R.H. SINGH

Kāyacikitsā is one of the eight aṅgas of Āyurveda which deals with the matters relating to General Medicine. It includes, in modern terms, Pathology, Dianosis, Therapeutic and Dietetics.

In Vedic literature, particularly in Atharvaveda, a number of diseases are mentioned along with their treatment with drugs and incantation The scientific foundation of pathology and medicine was established later after the basic concepts were systematized

The tradition of *kāyacikitsā* was known as the School of Medicine led by Punarvasu Ātreya (Paunarvasava or Ātreya-sampradāya) parallel to the School of Surgery founded by Dhanvantari

ROGAVIJÑANA (PATHOLOGY AND DIAGNOSIS)

Āyurveda considers *Dosa-Dusya-sammūrcchanā* i e morbid interaction of *Dosas* and *Dusyas* as the disease and cessation of such an interaction i e , *Samprāpti-vighatana* as *Cikitsā,* the main objective being *Dhātusāmya*[1] In this context, Āyurveda puts special emphasis on the fundamental role of *Āhāra* i e diet and *Agni* i e digestion and metabolism — *'Rogāh sarve'pi mande'gnau'*[2], *Āhārasambhavam vastu rogāscāhārasambhavāh* ('Ca Su 28 45)[3] Besides this biological approach, Āyurveda also puts emphasis on the psychological and spiritual aspects of health and disease As a matter of fact, Āyurveda propounds two main streams of *Cikitsā* viz [4] (1) *Laukikī Cikitsā* for the care of disease and ill health aiming at *Ārogya* or *Svāsthya* and (2) *Naisthikī Cikitsā* for the care of worldly bondage aiming at *Moksa* Thus Āyurveda encompasses the entire spectrum of physical, mental and spiritual illness For this it launches comprehensive methods of care of life and health both by way of medical measures and non-medicinal procedures i e *Dravyabhūta* and *Adravyabhūta Cikitsā*

Ayoga, Atiyoga and *Mithyāyoga* of *Kāla* (Time factor), ***Buddhi*** (Intellect) and *Indriyārtha* (Sensory objects) have been considered as the generic causes of ill health [5] The disease process is described as *Dosa-Dūsya* interaction occuring at specific sites pre-disposed by *Kha-Vaigunya* The stages of the disease process appropriate for therapeutic intervention are described in terms of Satkriyākāla i e *Sañcaya, Prakopa,*

Prasara, Sthānasamśraya, Vyakti and *Bheda.*[6] The diseases are classified in following broad categories which are of importance in the context of treatment.[7]

(A) *Aetiologically*
  1 *Nija* — Endogenous
  2 *Āgantuja* — Exogenous

(B) *As per seat of disease.*
  1 *Śārīra* — Bodily
  2 *Mānasa* — Mental

(C) *As per specificity to Dosas*
  1 *Nānātmaja* — Specific to Dosas
  2 *Sāmānyaja* — Non-specific to Doṣas[7a]

(D) *According to origin*
  1. *Ādhyātmika* (Biological)
    (a) *Ādibalapravṛtta* (Hereditary)
      (i) *Janmabalapravrtta* (Congenital)
      (ii) *Doṣabalapravrtta* (Humoral)
  2 *Ādhibhautika* (externally invaded)
    (a) *Saṅghātabalapravrtta* (Accidental)
  3 *Ādhidaivika* (Natural & Environmental)
    (a) *Kālabalapravrtta* (Due to time factor)
    (b) *Daivabalapravrtta* (Environmental)
    (c) *Svabhāvabalapravrtta*[7b] (Natural)

Āyurveda describes a comprehensive methodology of clinical diagnosis Instead of giving importance to specific disease-entities and specific nomenclature, Āyurveda emphasises that it is not possible to name every disease-state nor is it necessary Hence Āyurveda advocates that it is essential to identify the nature of abnormality of the *Doṣa, Dūsya* and *Adhisthāna* of each ailment rather than naming each disease

Adequate knowledge of the nature of the disorder of *Dosa, Dusya, Adhisthāna* enables the physician to treat the disease adequately[8]

Complementary to the above approach Āyurveda advocates twofold approach to the clinical examination of a patient viz , (1) *Rogī-Parīksā,* (2) *Roga-Parīksā* It emphasises more on the need of evaluation of personality, vitality and state of health of the person who is suffering from the disease i e , *Rogī-Parīksā* than examination of the disease-state itself (*Roga-Parīksa*) *Rogī-Parīksā* is essentially based on Caraka's ten *Parīksya*[9] viz *Prakrti, Vikrti, Sāra, Samhanana, Pramāna, Sattva, Sātmya, Vayas, Āhāraśakti* and *Vyāyāmaśakti* applying the methodology of *Sadvidha Parīksā (Praśna + Pañcendriya-Parīksā)* and *Trividha/Caturvidha Pramāna (Pratyaksa, Anumāna, Āptopadeśa* and *Yukti)* Roga-Parīksā is essentially carried out with the help of *Nidāna-Pañcaka* e g *Nidāna* (Etiology), *Pūrvarūpa*

(Prodrome), *Rūpa* (Symptoms), *Upaśaya* (Theiapeutic suitability) and *Samprāpti* (Pathogenesis)

The Spectrum Of Treatment Procedures

The full spectrum of treatment procedures as described in Āyurveda is presently not in practice The practice of many aspects of Āyurvedic medicine has become very meagre and Āyurveda as practised today is very much incomplete, though attempts are being made to revive and develop different aspects. The *Āyurvedic Cikitsā* may be summarised as below:

1 *Naiṣṭhikī Cikitsā — Moksadāyinī*

2. *Laukikī Cikitsā — Svāsthyadāyinī*
   Daivavyapāśraya Cikitsā
   Sattvāvajaya
   Yuktivyapāśraya Cikitsā
   A. *SAMŚODHANA*
      Antahparimārjana
      Bahiḥparimārjana
      Śastrapranidhāna

   B *SAMŚAMANA*
      Auṣadha
      Anna
      Vihāra

Yuktivyapāśrāya Cikitsā[10]

Āyurveda makes mainly three categories of therapeutic approaches viz , *Daivyapāśraya Cikitsā* or Divine therapy, *Yuktivyapāśraya Cikitsā* or Rational therapy and *Sattvāvajaya* or Psychotherapy *Daivavyapāśraya Cikitsā* deals with divine methods of treatment such as *Mantra,* worship, sacrifices, wearing of auspicious stones etc , specially used for the treatment of diseases caused by invisible agents or the acts of past life based on the theory of *Karma* *Sattvāvajaya* is the psychotherapeutic procedure advocated for treatment of mental diseases Both these categories of therapies are not much in use at present times What is now commonly practised in Āyurveda is largely the *Yuktivyapāśraya Cikitsā* Essentially *Yuktivyapāsraya Cikitsā* is that kind of therapy which is administered in consideration of the theory of *Pañca-Mahābhūta, Triguna* and *Tridosa* and aims to achieve *Dhātu-sāmya* by using appropriate drug, diet and conduct following the doctrine of *Sāmānya* and *Viśesa* The basic dictum of *Yuktivyapāśraya Cikitsā* is to deplete the *Dosas* which are aggravated, to increase the *Dosas* which are depleted and to preserve those which are in normalcy and optimum balance[11] It is primarily for this purpose that Caraka propounds the *Sadupakrama*[12] viz , *Snehana, Rūksana, Brmhana,*

Lañghana, Stambana and *Svedana**. These procedures are nothing but appropriate method of augmenting and or depleting the decreased and or increased *Dosas, Dhātus* and *Malas* on principles of *Sāmānya* and *Visesa* The same *Sadupakramas* are recategorised in two-fold approach[12] i e , *Dvividha Upakrama* namely (1) *Santarpana,* (2) *Apatarpana* The entire therapeutics of Āyurveda fundamentally swings around these two-fold procedures

In the same sequence the *Yuktivyapāśraya Cikitsā* of Āyurveda emphasises on the following approaches in the treatment of the sick (1) *Nidāna-parivarjana* i e. removal of the cause of the disease,
(2) *Viparīta-krama* i e opositistic therapy as described below classified in six categories[13]

Hetu-viparīta — Treatment against the cause of the disease.

Vyādhi-viparīta — Treatment against the disease proper.

Hetu-vyādhi-viparīta — Treatment against both the disease and its cause

Hetu-tadarthakārī — Treatment that would produce the same condition at the cause

Vyādhi-tadārthakārī — Treatment that would produce the same condition as the disease

Hetu-vyādhi-tadārthakārī — Treatment that would produce the same condition as both the cause and the disease

Each of the above mentioned six treatments is further subdivided into three namely, *Ausadha* (drug), *Anna* (Diet) and *Vihāra* (Behaviour) Thus there are eighteen kinds of treatment Of these, it is easy to understand the therapeutic measures directed against the cause (*Hetu*), the disease (*Vyādhi*) or the both The concept of treatment aimed at producing the same condition as the disease itself, needs explanation The following example may help to understand the apparent contradiction In early diarrhoea and vomiting, drugs that would open up the bowels like *Harītakī* and emetics like *Madanaphala* are used respectively By this treatment the accumulated *Dosas* are expelled from the system by aggravating the diarrhoea and the vomiting So also the application of ointments prepared from *Aguru* is advocated for the treatment of burns though *Aguru* is *usnavīrya* and, on general principles, is contra-indicated in the treatment of burns Similarly in certain cases of poisons or poisonous foods, the administration of poison is known to prevent tissues from producing reaction or to counteract the toxic effect It is also stated that if the same *Dravya* or article responsible for the reaction is administered previously the subject

* These are based on *Snigha-ruksa, guru-laghu* and *Sita-usna viryas* respectively which are related to *Vāta, Kapha* and *Pitta* respectively (ed)

becomes immune to or prepared for the disease and its reaction. The concept of *Sātmya* and *Okasātmya* refer to the same idea Probably the approach of Homeopathy has lot of similarity to the *tadārthakārī cikitsā*.

SAṂŚODHANA AND SAṂŚAMANA THERAPIES

Treatment is of two categories;[14] *Samśodhana* (purification) or radical treatment, and *Saṃśamana* (pacification) or palliative treatment. In cases where the vitiation of the *doṣa* is extensive and the patient is constitutionally strong, radical treatment is recommended. Palliative treatment is the choice when the vitiation of the doṣa is moderate and the patient is weak. *Śodhana Karmas* are of five kinds,[15] depending on the *doṣa* affected and the site of involvement They are popularly known as *Pañca Karma* viz.,

1. *Vamana* (emetic)
2. *Virecana* (purgative)
3. *Śirovirecana* (errhines)
4. *Vasti* (medicated enemata: *anuvāsana* (unctuous) and *āsthāpana* non-unctuous)
5. *Rakta-mokṣaṇa* (Blood-letting)*

Vamana is indicated in diseases of *kapha* and those pertaining to *āmāśaya*. *Virecana* is applied in *pittaja* diseases and when the *doṣa* is in *pacyamānāśaya*. *Śirovirecana* is for *doṣas* in the head *Vasti* is particularly for diseases caused by *vāta* and those situated in *pakvāsaya*. *Rakta-mokṣana* is indicated in diseases of the blood, that is, when the *doṣas* have affected the blood and have manifested particular disease symptoms.

The *śodhana* procedures are preceded by a phase of preparation. The patient is subjected to what is called *pūrva karma* or preliminary (preparatory) treatment. This is mainly of two kinds: *Snehana*[16] (external and internal unction of the body) and *Svedana*[17] (inducing perspiration) After completion of the main procedures of *Śodhana* the patient has to pass through a special dietary regimen called *Paścāt Karma* (*Saṃsarjana Krama*)[18]

The *Śamana Karmas* consist of the following[19]

1. *Dīpana*. administration of drugs which promote *jaṭharāgni* (the digestive fire) and appetite.
2. *Pācana*. administration of drugs to help digestion and assimilation.
3. *Ksudhānigraha* or *Upavāsa* fasting or enduring hunger
4. Tṛṣanigraha. Abstention from fluids or enduring thirst.

* In earlier classical texts, *Pañca Karma* consists of *Vamana*, *Virecana*, *Niruha*, *anuvasana* and *nasya* Later on *raktamoksana* by combining *Niruha* and *anuvasana* in one *(basti)* (ed)

5 *Vyāyāma* Physical exercise.
6. *Ātapa* Exposure to the sun
7. *Pravāta* Exposure to wind and breeze.

These seven methods of treatment are palliative They do not expel the vitiated *doṣa* and so do not eradicate the disease By the use of these methods, however, the disturbed *doṣa* is brought to its equilibrium They are generally resorted to when radical therapy is contra-indicated, as in the case of pregnant women, children and aged and debilitated persons. *Śamana* treatment is given even when the *Agni* or digestive fire is very weak.

In certain conditions and diseases, the treatment should be supplemented by measures of *Saṃtarpaṇa*[20] (supportive) or *Bṛmhana* (nutritive) treatment These are intended to restore the patient to the normal state after the treatment of debilitating conditions with drugs, diet and physical exercise Disease of pregnancy, the puerpurium and infancy require only *Brmhaṇa* treatment. Disease like *Ksaya* (consumption) and *Vāta* require chiefly *Tarpana Kriyā* These are general rules; the physician must exercise his judgement in applying them to individual cases Examples of ths items of diet used in *Bṛmhana Kriyā* are milk, meat and foods in which *Madhurarasa* (sweetness), *Sītavīrya* (coldness,) *Guru* and *Snigdha guṇas* (heavy and unctousness) are predominant They are considered to nourish the body tissues * *Snehapāna* or administration of fatty material like ghee and bone-marrow is considered to be good. Sleep, rest, mental tranquility and activities that give pleasure are factors that promote growth *Bṛmhaṇa* treatment can be claimed to be successful if, along with the disappearance of symptoms, the patient gains vitality and puts on weight

DIET, ANUPĀNA AND PATHYĀPATHYA

As pointed out earlier, suitable diet is an important consideration in the treatment of disease in Āyurveda. Similarly an appropriate *Anupāna* is also an integral part of the therapy. The selection of diet and *Pathyāpathya* for a particular patient depends on the same principles of *Yukti* which are applied in selecting therapeutic agents The fundamental principles are the consideration of *Pāñcabhautika* constitution, the *Triguṇātmaka* nature and likely *Tridoṣika* influence of a given food article ordinarily adjudged in terms of *Rasa, Guna, Vīrya, Vipāka* based on the doctrine of *Sāmānya* and *Viśeṣa.*

As a matter of fact, the concept of *Pathyāpathya* is similar to the concept of *Upaśayānupaśaya* and refers to the entire spectrum of goods and bads in the range of both *Anna* (diet) and *Vihāra* (conduct) However, the dietetics forms the main component Caraka states that the following factors determine *Pathya* and or *Apathya* effect of a substance or procedure.[21]

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* In ancient days, a preparation of *Saktu* (parched gram flour) mixed with sugar, ghee etc was very popular It was called *'mantha'* (as it was prepared by churning like modern *Lassi*) or *'tarpana'* (because of its saturating effect) (ed)

1. *Mātrā* (Measure)
2 *Kāla* (Time)
3. *Krıyā* (Mode of Preparatıon)
4. *Bhūmı* (*Desa, Ātura*) (Habıtat)
5 *Deha* (Constitutıon)
6 *Dosá* (Morbıd Humours)

Among these, *Mātrā* has been consıdered as the most ımportant factor as ıs classically exemplıfied by the ***Apathya*** effect of *Pıppalī, Ksāra* and *Lavaṇa* ıf used beyond the ındicated measure However, certaın stuffs are ***Pathya*** or *Apathya* by theır nature or *Svabhāva*

In addition to the facts mentıoned above, ıt is also ımportant to consıder the method of **consumption** of food In thıs context, Caraka's plan of *Aṣṭavidha Āhāravidhivıśesa-āyatana*[22] are important viz , (1) *Prakrtı* (Natural qualıty), (2) *Karaṇa* (*Saṃskāra*) (Preparatıons), (3) *Samyoga* (Combınation), (4) *Rāśı* (Quantum), (5) *Deśa* (Habıtat), (6) *Kāla* (Tıme or dısease state), (7) *Upayoga-Saṃsthā* (Rules of use) and, (8) *Upayoktā* (user) Sımılarly the Suśruta's *Dvādasa Aśana-vıcāra*[23] as mentıoned below ıs equally ımportant — (1) *Śīta*, (2) *Uṣna*, (3) *Snigdha, (4) Rūksa*, (5) *Drava*, (6) *Śuṣka*, (7) *Ekakālıka, (8) Dvikālıka*, (9) *Osadhıyukta*, (10) *Mātrā-hīna*, (ıı) *Praśamana-Kāraka*, (12) *Vṛtti-Prayojaka*. Besıdes the above mentioned fundamental prıncıples of dıetetıcs of Āurveda, the texts describe specıfic *Pathyāpathya* and *Anupāna* schedules beneficıal for dıfferent dıseases. Thus dıet is an important component of management of a dısease in the same way as dıet ıs condıdered an ımportant aıd to preservatıon of lıfe and health. That is why Caraka ıncludes *Āhāra* among the three *Upastambhas* — "*Traya Upastambhāḥ Śarīrsaya-Āhāraḥ, Svapno, Brahmacaryamıtı.*[24]

THE CATUṢPĀDA CIKITSĀ

Caraka states wıth emphasıs that success ın treatment depends not only on the efforts of the physıcıan but needs optımum qualıtıes of followıng four[25] — Physicıan, Drug, Nursıng Care, Patıent These have been consıdered as the four lımb of treatment (*Bhısag Dravyānyupasthātā Rogī Pāda-Catusṭayam*).

LITERATURE

Inıtıally the *Caraka-samhıta* was the maın guıde for physıcıans Gradually on expansıon of the subject, the lıterature on *Kāyacıkıtsā* was divided ınto the followıng heads:

1 *Nıdāna* (Pathology & Dıagnosıs)
2. *Cıkıtsā* (Therapeutıcs)
3 *Pathyāpathya* (Dıetetıcs)

On Nidāna, the *Rugviniścaya* of Mādhavakara (popularly known as *Mādhavanidāna)* became very popular among vaidyas and remained as the unique text on the subject for centuries and is still continuing and such.

In the field of *Cikitsā, Mādhava-cikitsā* and Vṛnda's *Siddhayoga (Vṛndamādhava)* were important texts dealing with principles of and formulations used in treatment of diseases *Cikitsākalikā* of *Tīsaṭācārya* was also a popular handbook. There were other texts having formulations arranged according to pharmaceutical forms such as *Nāvanītaka* and *Yogaratnasamuccaya* of Candrata

No separate work on *pathyāpathya* is found belonging to the ancient period. According to the ancient tradtion, this topic is included in the texts on *Cikitsā* at the end where drug treatment concludes.

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10.3

ŚALYATANTRA (SURGERY)

K.R. SRIKANTA MURTHY

After its evolution further development of Āyurveda was channelised into two main schools, (1) School of Surgery also known on the founder's name as the School of Dhanvantari (Dhānvantrarīya Sampradāya) and (2) the School of Medicine founded by Ātreya (Ātreya-sampradāya)

The Vedic period of Āyurveda has great significance when Aśvins performed miraculous feats in surgery. This knowlege was transmitted through Indra to Divodāsa Dhanvantari, the king of Kāśī, who taught it to his disciples Among them Suśruta was the topmost, others were Aupadhenava, Vaitarana, Aurabhra, Pauskalāvata, Karavīrya and Gopuraraksita Ḍalhana, the commentator, added to this list Bhoja, Nimi, Kāṅkāyana, Gārgya and Gālava They all composed their treatises but Suśruta's compendium excelled.

The compendium of Suśruta (*Suśruta-samhitā*) is the epitome of ancient Indian surgery which expounds the concpts and skill in surgery prevalent at that time Suśruta is rightly called as 'Father of Surgery' who influenced the status of the science all over the world It is to be noted that the *Suśruta-samhitā* was translated into Arabic which influenced the other parts of the globe too

Importance of surgery during the ancient times is evident from the fact that *śalya* was accorded prominent (first in *SS* and third in *CS*) among the eight divisions of Āyurveda

Knowledge of Anatomy

Suśruta had clearly recognised the imperative need of good knowledge of Anatomy for the surgeon and for this he recommended the dissection of human cadaver for proper knowledge of the subject The method he suggests for preparing the cadaver is as follows — "the dead body of a well built male adult, who has not died of a longstanding disease is to be selected the intenstines cleared of the faecal matter, then the entire body is wrapped with Kuśa grass, fastened with rope, kept immersed in running water for seven days in a secluded place Afterwards, it is taken out and using brushes made out of grass, hairs, reeds and bamboo spikes, the entire body scraped commencing with the skin, and observing all the tissues, thoroughly[1]" Though this method is crude and unsatisfactory yet it was a very bold venture when touching a dead body invoked social boycott In the words of Thorwald of Germany "Certainly this was the oldest lesson in dissection known to History" [1a]

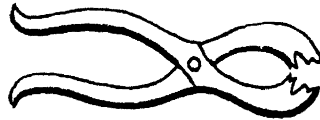
Suśruta describes the *skin (tvak)* as seven in number (of its layers), their thickness and diseases arising from them, the covering *membranes (Kalā)* also seven in number, their features, functions and places, hollow organs (*āśayas*) eight in number, their places and functions, mascular ropes (*māṃsarajju*) four in number and their places; four kinds of plexuses (*jāla*) of muscle, sutures (*sevanī*) and their sites; snāyu nine hundred in total and specific number in different places, their four kinds and locations of each[2], Veins (*sirās*) seven hundred in total, their kinds, functions, effects of injury, and specification ot those suitable and unsuitable for cutting (venesection),[3] arteries (*dhamanīs*) twenty four major (*mūladhamanīs*) dividing themselves into innumerable branches, their locations, functions and effects of injury,[4] muscles (*peśī*) five hundred in total, their locations and physical features, bones (*asthi*) Three hundred in total inclusive of cartilages (*taruṇāsthi*) and teeth (*rucakāsthi*) their kinds, locations and features, bony-joints (*asthisandhi*) two hundred ten in total), their classification and locations; confluence of bones (*asthisaṅghāta*) fourteen in number, their locations;[5] external orifices (*srotas*) nine in number, their sites, vital spots (*marmas*) one hundred seven in total, their classification-structurewise and effectiwise (of injury), exact location and even effects on injury to each of them,[6] blood (*rakta*) and other tissues (*dhātus, upadhātus*) etc

Embryology includes constituents, formation, monthwise development of tissues, organs and the mind;[7] kinds of human constitution (*Dehaprakṛti*) based on physical (*śārīrika*) and psychological (*mānasika*) characteristics[8]; and even physiometry [9] The amount of such information in *Suśruta-saṃhitā* being more than that found in other ancient treatises, has given rise to the popular saying that "Suśruta is the best in anatomy"

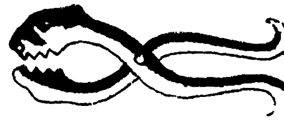
Instruments and Appliances

Suśruta describes one hundred one blunt instruments (Yantras), classified into six kinds, viz cruciform (*Svastika*), pincer-like (*Sacmdamśa*) flat-edged (*Tāla*), Tubular (*Nāḍī*) rod-like (*Śalākā*) and accessory (*Upayantras*), their dimensions, shapes resembling the mouth of different birds and animals, manufacture, merits and demerits, fabrication of new ones as and when required, mode of use of each one etc , in detail[10] He does not forget to call the surgeons's hand as the most important instrument on which all surgical work solely depends [11] Many accessory instruments (*Upayantras*) such as caustic alkalis (*Ksāra*), fire or thermal cautery (*Agni*), magnet (*ayaskānta*), ropes, straps of leather, cotton cloth, swabs, threads of different kinds etc., have been enumerated[12]. Saw, axe, scissors, chisel, hooks, scrapers, spikes etc ,the dimension of their sharp edges, correct method of holding and using, merits and demerits, tampering and sharpening, and preservation in a wallet [13] Accessory instruments (*anuśastra*) include leeches (*Jalaukā*), caustics (*kṣāra*), rock crystal (*sphatika*), *kāca* (lens) etc [14]

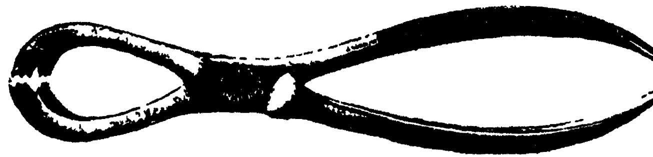
Judged by any standard the instruments and appliances of Suśruta are admirable His method of naming the instruments after animals and birds is adoped even today He envisages invention of new instruments He can be regarded as the first person to introduce diagnostic instruments He is rightly called as 'Father of Surgery'



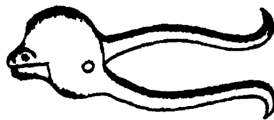
Simhamukha Svastika, or Lion forceps, after Thakore Saheb (p 78)



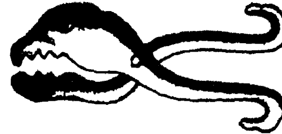
Simhamukha Svastika (p 78)



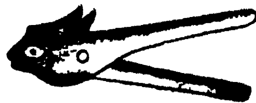
Lion forceps (Fergusson's)
A H Fig. 1052 (p. 78)



Vyāghramukha Svastika, or Tiger forceps, after Thakore Saheb (p 78)



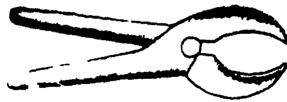
Vyāghramukha Svastika (p. 78)



Vṛkamukha Svastika, or Wolf forceps, after Thakore Saheb (p. 78)



Vṛkamukha Svastika (p. 78)



Tarakṣumukha Svastika,



Tarakṣumukha Svastika (p 78)

Ancient Surgical Instruments
(From G N Mukhopadhyaya's '*The Surgical Instruments of The Hindus*')

Anaesthesia

Suśruta had felt the need of making the patient insensible to pain for successfil performance of surgical operation and for this he adopted the use of wine[15] "Susruta must be accepted as a pioneer in some form of anaesthesia in the remote past of history of surgery in India[16] "

Surgical Techniques

Suśruta mentions eight kinds of surgical techniques (*śastrakarma*) such as incising, excising, scraping, puncturing, probing, extracting, draining and suturing[17] All surgical operations that are carried out involve one or more of these eight techniques only and it is hard to add any new one even today

Practical Training

To obtain proficiency, skill and speed in these techniques, suśruta has advised practising them on experimental models and other suitable materials such as fruits, vegetables, leather bag filled with liquids for incising, excising and draining, hides of animals for scraping and puncturing, cloth and animal skin for suturing, moth-eaten wood or bamboo for probing, wooden planks smeared with wax for scraping, manikin of human body parts for bandaging etc This was the method of practical training and making the surgeon fit to perform surgery (*Yogyā*)[18] Suśruta should be regarded as the pioneer to imagine, evolve and introduce simple experimental models for training in surgical procedures

Operative Procedures

Ingenuity of Suśruta is best reflected in the systematic division of operative procedures into three distinct stages -Viz pre-operative preparating procedures (*pūrvakarma*), chief surgical work or operation proper (pradhāna karma) and post-operative procedure (*paśchāt karma*)[19] Pre-operative procedure consists of collection of all the required materials ready for use, preparing the patient and ensuring his protection, operation proper included one or more of the eight surgical techniques, application of drugs, suturing, bandaging or plastering etc Post-oprative measures involved wound dressing, prevention of sepsis, regimen of diet and activities

He insists on pefrormance of the operation at the proper time only, neither early nor late To decide this, he divides inflammatory swelling (vranaśotha) into three stages - Viz , the first unripe stage (*āma avasthā*) the second the ripening(*pacyamāna)* and the third the ripe (*pakva*)[20] Operation should be performed in the ripe (*pakva*) stage only "He who by ignorance performs the operation in the unripe stage and he who neglects the ripe stage-both should be considered as cheats-such is the admonition by Suśruta[21]

Suśruta insists that the incisions/surgical wounds should be wide and deep to help removal of morbid factors (endogenous or exogenous) completely, it can be either

vertical, horizontal, or curved, avoiding injury to veins, tendons, and vulnerable spots[22] The wound should be cleared of all morbid materials without leaving any residue or remnant. A pad of cotton cloth smeared with paste of healing drugs, honey and ghee is placed inside the cavity of the wound, next the opposing edges of the wound pulled close and stiched, thread of flax, silk, cotton, inner bark of trees, tendons, sinews or hair of animals were the suturing meterials The site of operation is then given a thick coat of paste of drugs (plastering), wrapped with a sheet of cloth and bandaged properly.[23]

Suśruta described fourteen kinds of bandages and even specifies the kinds suitable to different parts of the body[24]

Suśruta's conception of post-operative care has been evolved keeping in mind all the hazardous complications and sequelae of any surgical operation likely to occur even by slight negligence It consists of keeping the patient in a special chamber or post-operative ward (*vraṇitāgāra*) devoid of dust, smoke, breeze, insects, harmful objects and even women, should be washed and disinfected twice daily for at least ten days; enumeration of many do's and dont's regarding food, drinks, physical and mental activities of the patient etc , are intended to prevent sepsis and other mishaps[25]

Parasurigical Measures

Suśruta does not recommend resorting to the knife at the first instance He advocates simple therapies like blood-letting, application of warm and cold poultices of drugs, cauterization with alkalies and fire These are best suited to persons unfit for surgery, and for non-emergency diseases Many a time these act as supplements to surgery, help to avoid surgery and even complementary to it.

a) Blood-letting (*Raktamoksana*) is to be done by any one of the four methods Viz application of leeches for sucking blood, (*jalaukāvacārna*), incising (*pracchāna*), sucking with the help of animal horns (śrṅga) or empty gourd (alābū) and venesection (sirāvyadha)[26] Removal of vitiated blood from the body cured diseases of the skin, tumors, inflammatory swellings, disorders of blood and many others[27] Suśruta describes identification of poisonous and non-poisonous leeches, rearing of the non-poisonous ones, procedure of applying them and management of complications,[28] method of incising, using the sucking horn, cupping with gourd[29], the procedure of venesection, specifies veins fit and unfit for cutting, the places, mode of instrumentation, quantity of blood allowable and management of complications[30] Methods of controlling haemorrhage suggested by him are use of astringents, cold objects, dusting with ash of drugs and touching with red hot iron[31] Susruta considered, and rightly too, that venesection is half of the treatment in surgical diseases[32]

b) Application of poultices of drugs on the diseased part, either warm (*pradeha*), cold (*pralepa*) or lukewarm (*ālepa*), thick or thin, is advocated for

inflammatory swellings, tumours, painful parts etc , to arrest the progress of inflammation, speed up the process of putrefaction, to relieve pain and other actions which would reduce the need of surgery and might even help avoid it[33]

c) Suśruta considers cautery-either chemical (caustic alkalies-*kṣāra*) or thermal (fire-agni) as similar to surgery in action, simple and less harmful, hence suitable for those unfit for surgery He desctibes the method of preparation of caustic alkalies, of different strengths, procedure of use, management of complication etc , in detail[34] Similarly is his description of thermal cautery (*agnikarma*)[35] Under this heading itself Suśruta has included heat-stroke (dhūmopahata), sunstroke (*ātapadgdha*), stroke by lightning (vidyuddagdha), and frost-bite (*śītadagdha*)[36] This view that all trauma whether due to extreme heat or cold, chemical or inert fluid, produces damage almost similar and has to be managed as one entity, has gained acceptance in modern surgery only recently Susruta deserves credit for proposing this view at a very early age[37]

Removal of Foreign Bodies

This branch of medical science propounded by Divodāsa Dhanvantri and popularised by Suśruta is called *Śalyatantra* because it deals mainly with the knowledge and removal of *Śalya** (the disease-causing foreign agent) which may be intrinsic (*ābhyantara*) or extrinsic (*bāhya*) The former includes all those produced in the body such as abnormal *dosas*, tissues, wastes etc , while the latter includes all kinds of materials which enter the body accidentlly by force These foreign bodies may be of metals, bamboo, trees, grass, horn, bone, stone, sand, hair, nails, excreta, poison, pus etc Thus in its wide connotation, it may refer to any harmful material, in its more common meaning it refers to the arrow which was the chief missile in ancient warfare to the removal of which , surgical operation becomes necessary most often Suśruta has described the diferent kinds of foreight bodies, their lodgings, signs, and symptoms, methods of detection of invisible ones, methods of removal, complications and sequelae He emphasises the need of good knowledge of vital points (marmas), effects of their injury before undertaking removal of arrows etc[38] His methods of detecting invisible foreign bodies by anointing the whole body of the patient with sandal paste and detecting the place on which the paste dries up quick, taking the patient in a chariot (vehicle) for journey on a rough road and detecting the painful part etc ,are ingenious [39]

So also his method of removing arrow etc , stuck fast in the bones by making use of a bow, branch of tree or bridle of a horse, readily available in the battle field[40]

**The word* '*Śalya*' is derived from the root '*Śal*' or '*Śval*' meaning to move quickly 'or to injure' (ed)

Military Surgery

The surgon accompanied the king to the battle field and was responsible for protecting the king and his army from dangers, such as recognising poisoned foods, drinks and other articles of use, detoxicating such materials and treating persons affected by poison, providing medical and surgical treatment at the battle field and many other allied duties.[41]

Suśruta excels in the knowledge of accidental wounds and their treatment He classifies accidental wounds into six kinds viz (1) wound causing severance of a part or a whole limb (chinna) (2) wound into a hollow viscus puncturing it (bhinna) (3) puncturing wound of any structure other than a hollow viscus (*viddha*) (4) uneven wound or lacerated wound (*kṣata*) (5) crushed wound (*picchita*) and (6) superficial abrasion (*ghṛṣṭa*) [42] It is a matter of pride to observe here that his classification has not changed even ofter many centuries except for inclusion of gunshot wound [43]

Washing the wound with decoction of bactericidal drugs, removing all foreign bodies by appropriate method, controlling haemorrhage, suturing the edges of the wound, applying paste of healing drugs, and bandaging are the different successive steps in the treatment of wounds Making use of big ants for uniting two edges of the cut intestines by making the ants bite the edges and then cutting off their head when they are holding with their jaws, acting as pincers-adopted by Suśruta, speaks of his ingenuity and antedates the use of organic adhesives of the present day surgery [44]

He has described twelve kinds of fractures (*asthibhagna*) and six types of dislocations (*sandhimukti*), along with their symptomatology and management including physiotherapy Traction, manipulation, apposition and stabilisation were the four principles of fracture treatment *[45]

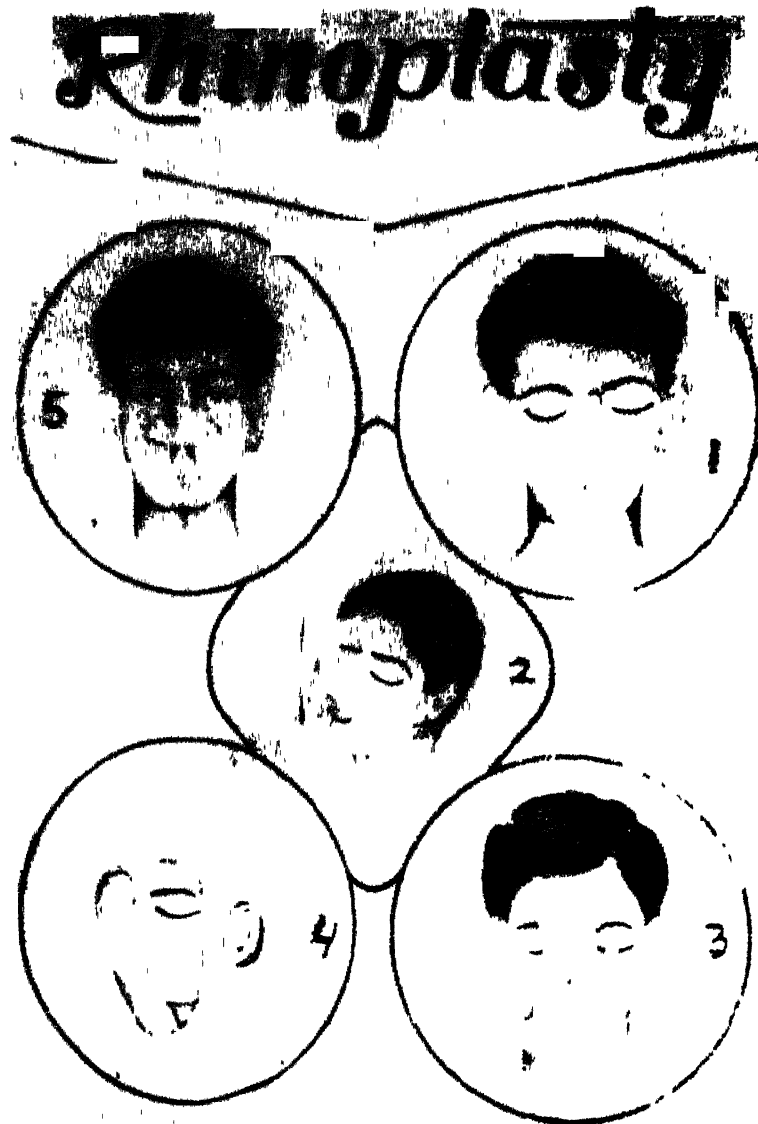
Other examples of his experience in sugery in the war field is the treatment of injury to the cranium and prolapse of the testes

Plastic Surgery

Suśruta's most outstanding contribution is reconstructive surgery or plastic surgery Reconstruction of mutilated nose (Rhinoplasty), earlobe (otoplasty) and lips (oroplasty), grafting of the healthy skin from the cheek, rotation of the pedicle flap, transfer to the nose, ear or lips and reconstruction resembling the normal shape have been described by him in meticulous detail[46] The portion of the nose to be covered should be first measured with a leaf A piece of skin to the required size should then be dissected from the cheek and turned back to cover the nose The part of the nose is to be prepard well by making it raw and the surgeons should join the two parts quickly but

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*The tradition of bone-setting is still continuing in various parts in south India, it is organised as '*marmacikitsā*' (ed)



Practised in 1 India,2 France 3 Wolkdwitsch's method
4 Italy, 5 Israel
(Courtesy Deptt of Shalya Shalakya I M S BHU)

evenly and calmly and keep the skin properly elevated by inserting two tubes inside the nostrils, so that new nose may look normal. The flap of the skin taken from the cheek is kept intact for having Proper blood circulation to the replaced areas

Suśruta's method of Rhinoplasty has stood the test of time and finds mention as the Indian method in modern books on plastic surgery Even with great advacces in surgery in the present day hardly any modification has been brought up in the method described by Suśruta.

Other Important Surgical Operations

Suśruta has described the surgical treatment for many major and minor diseases of which the following are a few important ones — Haemorrhoids (*arśas*), fistula-in-ano (*bhagandara*), urinary calculi (*aśmarī*), hernia (*antravrddhi*), intestinal obstruction (*baddhodara*), perforation of abdominal viscera (*chidrodara*), abdominal tumors (*gulma*), benign tumors (*granthi*), carcinoma (*arbuda*), actinomycosis (*valmīka*), filariasis (*ślīpada*), obstructed labour (*mūdha garbha*), inflammatory and neoplastic diseases of the teeth, gums, palate, tongue and throat, diseases of eyes and ears etc

His method of treating rectal fistula by plugging it with a thread processed with vegetable alkalies (*kṣārasūtra*)[47] has been found very satisfactors by modern surgeons and is becoming popular in western countries

Suśruta's knowledge about ulcers (*vrana*) and their treatment is also excellent. He describes in detail the colour, smell, discharge, nature of pain and other signs and symptoms of differnent stages of ulcers viz , the unclean (*duṣtavraṇa*), the clean ulcer (*śuddha vraṇa*), the healing ulcer (*ruhyamāna vrana*) and the healed ulcer (*rūdha vrana*)[48] and mentions good and bad prognostics and treatment in detail. His description of a perfectly healed ulcer such as absence of induration, swelling and pain, return of the normal colour and level of the skin at the site denote his criteria of judgement[49]

The assumption that surgery waned and gradually came to a downfall due to emphasis on non-violence by Jainas and Buddhists is not correct On the contrary, Jaina monks carried with them a medicine-chest which contained surgical instruments as well Buddhism too was champion in ameliorating the human suffering by medical and surgical measures Lord Buddha himself was called '*bhisak*' and śalyahartā' Jivaka, the contemporary and devotee of Lord Buddha, was an eminent surgeon who performed miraculous cures by his surgical skill Akasagotta was another surgeon of repute who specialised in anorectal surgery Only because of loathsome scene Lord Buddha denounced the sungical operation in the anorectal region Another reason may be that surgical interference in that region is quite difficult and invites a number of complications

The actual reason hindering the progress of surgery in those times were want of anaesthesia and lack of potent antiseptics, Surgical operation on a man made

unconscious with wine along with physical pressure could not be expected to gain popularity and continue for long[50]

In conclusion, it may be said that surgery in ancient India was quite specialised and highly developed. There were a number of eminent surgeons who performed surgical operations with great skill and success and composed great compendia on surgery recording their valuable experiences.

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48 SS I. ch 23 full
49 SS I. 23/20
50 The mohacūrṇa of the Bhojaprabandha interpreted by some as 'anaesthesia' can not be so because the anecdote is quite imaginary and not at all concerned with facts

10.4

ŚĀLĀKYATANTRA

R.C. CHOUDHURY

Whenever some one takes upon himself the task of tracing the early history of any science, say for instance, of *Śālākyatantra*, one has got to proceed very cautiously, with faltering steps, as the early history of the science is obscured, for various reasons, over which a scholar has no control One may establish some hypothesis today on the basis of the data of discoveries made uptil now, but it may be reversed or out-dated some day afterwards when some new archeological findings may altogether belie the previous theories and set up a new theory

Another handicap with which a scholar is faced, is the want of much internal or external evidence In the matter of internal evidence too, names of many scholars are alluded to, their texts are quoted but it becomes difficult to trace the books in which they are said to occur or the authors of the texts It may be that there may be different authors bearing the same name A mythological figure may even remain so in this historical age, and it may become later a historical person These facts give rise to confusion very often so that it is sometimes very difficult to identify the authorship of some book or text categorically

Śālākya as a branch of the healing art, does not find mention in the Vedas Probably diseases belonging to the supracavicular region were treated, like all other diseases, in general The *Śalākins*' as a class of specialists developed in course of the Vedic period When Dhanvantari Divodāsa, king of Vārānasī, gave the discoirse of Āyurveda, by then *Śalākya* had developed as a speciality, as is evidenced by his own mention of Śālākya, next to Śalya as a branch of Āyurveda So also the statement of Agniveśa regarding specialists like Dhānvantarīyas (surgeons) corroborates this idea

In the *Atharvaveda*, description of añjana is found in detail It was found in the Trikakud region of the Himālayas or in the belt of the river Yamunā (as it was called 'Yāmuna)

Añjana was used in four ways-as collyrium, as amulet, for smearing and intake It cured fever, balāsa, burning sensation, bodyache and congestion of eyes"

The history of *Śālākya-tantra* appears to be as old as that of Āyurveda or any of its branches The two most authentic classical authors Caraka and Susruta allude to the eight branches enumerating them by their nomenclature but in some cases using slightly different terms though signifying the same Susruta's description is as follows -

"Brahmā divided Āyurveda into eight parts namely *Śalya*, *Śālākya*, *Kāyacikitsā*, *Bhūtavidyā*, *Kaumārabhṛtya*, *Agadatantra*, *Rasāyanatantra* and *Vājīkaṭanatantra*'[2]

Here we see that Śalya is mentioned first on account of *Suśruta-saṃhitā* being the surgical treatise mainly Śālākya comes next wherein also surgical operations are performed.

While Suśruta mentions the division of Āyurveda into eight parts in the third chapter of *Sūtrasthāna*, Caraka, on the other hand, describes it in the last chapter of the same[3]

It is interesting to note that in both these saṃhitās *Śālākya* occupies a prior place, in Suśruta it comes next to *Śalya* the second positon, and in Carakasaṃhitā also it occupies the second position next to *Kāyacikitśa*

Dalhana, commentator on the Suśrutasaṃhitā, defines *Śālākya* as the science and art in which the help of the *Śalākā* (rod-like instrument) is taken [4]

Suśruta further elaborates it by stating that it deals with the diseases of supraclaricular region such as those of ear, eye, nose and mouth etc, as well as their treatment[5]

The mention of *Śālākya* in both these texts establishes the fact that during their times *śālākya* had entrenched itself as one of the important branches of the healing art There were specialists of *Śālākya* who were called 'Śalākins' There were specialists who were known as *'dṛṣṭiviśārada* [5(a)] It also illustrates the fact that *śālākya* had become a popular science even during the pre-historic period

Though the mention of *Śālākyatantra* is there in the *Carakasaṃhitā*, it is only in the *Suśruta-saṃhitā* that the science has received elaborate attention and treatment As in case of other tantras excepting *Kāyacikitsā* and *Śalyatantra*, it has not been dealt with on an extensive scale, though done" of course, in greater details than the other tantras

The connotation of the term '*Śālākya*' has neither been given by Caraka nor by Suśruta Only Dalhana gave it

The legendary or mythological nature of the origin of this science is, as in case of Āyurveda, having descended from Brahmā, then to Dakṣa Prajāpati, Indra and Divodāsa Dhanvantari downwards

Regarding the compilation of Śālākya, certain important and interesting points deserve mention

After describing different varieties of *Bhagna* (fracture), Suśruta begins describing the diseases of mouth, Dalhana justifies it thus

"Now we shall describe the aetiology of oral diseases. In the last 15th chapter of Nidānasthāna (V 16-17) after describing fracture, he (Suśruta) commences describing causes, signs, symptoms of the diseases of mouth, as in the last verse, it has been said that rucaka bones (teeth) are broken And these are situated in the mouth So their diseases require to be described.[5(b)]

In *Nidānasthāna*, Suśruta has described only diseases belonging to mouth and in *Cikitsāsthāna*, their treatment It is peculiar to note that he has not alluded to the discussion on other sense-organs of *Śālakya* here Except in *Uttaratantra*, *Suśrutasamhitā* does not deal with any disease of eye, nose, ear or head nor is there in the beginning any introductory renmark regarding the place of these supraclavicular diseases

On the other hand, in *Uttaratantra* he specifically mentions in the preface that he would follow a definite line as adopted by Videhādhipati and Nimi, by implication, not of the school of Karāla and Bhadrāsaunaka

It is strange that after *kalpasthāna* wherein he described the toxicology, he begins all at once, the aupadravika adhyāya Dalhana, in course of describing the relevance of upadravas or complications says- *visa* (Poison) proves to be a complication of nija *vraṇas* (ulcers of endogenous origin), if poison is inserted into them they become complicated In the *āgantuka vrana* (wound due to trauma or poison) poisonous substances bring forth complications. Thus he thinks that the consideration of upadravas (complications) is appropriate or desirable In considering upadravas, he begins to deal with eye-diseases first of all It is difficult to understand how he was induced to pick up eye-diseases first of all except that the eye is the most important of the sense-organs So the discussion on them has not been done chronologically and is not at all logical in the context of the previous other chapters This signified that *Śālākyatantra* proper and comprehensive, comprising all its parts, as the eye, ear, nose, throat and head, was not well-developed in the beginning, in other words, when oral diseases were considered The disease of mouth and its different parts were probably written by one author, while the diseases affecting eye, nose, ear and head were described by a different author or a different school of scholars otherwise the distant dealing of the organs apears to be a bit strange and baffles understanding On the other hand, Dalhana quotes a set of verses said to have been written by Suśruta but whose source he does not clearly vouchsafe Says Dalhana -

" Janaka, the great king of Videha was approached by the brāhmanas to perform the sacrifice of Ālambha So he solemnised this Yajna As he began performing the sacrifice, the illustrious Sun became angry and destroyed his eye-sight After this, he undertook an arduous and long penance The radiant Sun was pleased with him at his penance and, glad at heart, gave him the knowledge of the science of eye (*Caksurveda*) out of compassion for all living beings "[6]

Thus Ophthalmology appears to have godly, divine or mythical origin, as in the case of *kāyacikitsā* or other branches of the medical science As it is not included by the

Brhatpañjikākāra Dalhana has not included in the main text G N Sen in his pratyaksaśārīra (P 13) refers to this as Daiva kāla

He divided the history into four epochs

i *Daiva kāla*- the period of godly characters and associations or the morning period

ii *Ārsa kāla*- the epoch of sages- the middle period

iii *Sangraha-kāla*- the epoch of compilers or the declining period- the evening period

iv The dark or twilight period or *Sāndhya kāla*[7]

The original Suśrutasamhitā was compiled by Suśruta The *Uttaratantra* with ophthalmology, nose, ear and head disease is added to it later by some follower of Suśruta and hence called *Sauśruta tantra*[8] Dr G N Mukhopadhyaya too subscribes to this view[9]

Other Śalākins (Experts in *Śālākya-tantra*)

The following are the names of ancient scholars who are considered to have been experts in Śālākya-tantra - Janaka (king of Videha), Videha, Mahāvideha, Nimi, Kāṅkāyana, Gārgya, Gālava, Sātyaki, Śaunaka, Caksusya, Krsnātreya etc

Of the above named scholars, Nimi and/or Videhādhipati are considered to be the topmost *śālākya* experts It is they about whom frequent references have been made

Among the great or holy sages assembled together at the foot of the Himālayas, the name of Nimi alongwith those of Bharadvāja, Punarvasu Ātreya, Dhanvantari and Kaśyapa appear (AS Su P 2; Kaśyapa Su P 27)

Nimi might have learnt *Śālākyatantra* there exclusively Original Physicians mentioned in the first chapter or Uttaratantra of the *Suśrutasamhitā*, have been identified by Dalhana as Videha etc

In the *Rāmāyana* and *Purānas* king Nimi has been said to be the founder of the kingdom of Videha Later on there were many kings of this line who took the title of Janaka In the Buddhist text, *Majjhima Nikaya*, Nimi is said to have been the last king of the line of Makhadeo whereas in Purānas Nimi is considered to be the founder of this line In *Majjhima Nikaya*, Karāla Janaka is said to the son of Nimi and the last man of the line (KS Upodghāta)

There is much controversy about the identify of Nimi, Videha, Janaka and Mahāvideha G N Sen had dealt elaborately with this topic (in upodghāta of Pratyaksa-śārīram) Some say that the renowned sage-king (*Rājarsi*) was *Videha, or Vaideha, the Śālākin* (the *Śālākya-specialist*) Some consider *Nimi* and king of *Videha as one person* In the *Rāmāyana*, it has been said as the king of Videha, Nimi is said to have preceded Janaka G N Sen says that the illustrious sage-king was the author of *Śālākya* The above quoted lines justify this idea In the *Caraka-samhitā*,

sımılarly, Janaka has been called the kıng of Vıdeha[10] As has been mentıoned by Dalhana, Srīkantha etc, Nımı ıs a separate person Srīkantha, ın the commentary on *Mādhava-nıdāna*, mentıons Nımı and Vıdeha successıvely [11] Dalhana quotes Vıdeha ın the context of general dısease, ın addıtıon to that of netrarogas[12] Vaıdeha ıs a word derıved from Vıdeha wıth the prefıx 'an' added to ıt It may refer several persons who were kıngs of Vıdeha Nımı beıng one of them ıs mentıoned as Vaıdeha[13] G N.Mukhopadhyaya opınes that there were four dıfferent persons bearıng these names — Nımı, Vaıdeha, Vıdeha and Mahāvıdeha[14] It ıs dıffıcult to accept thıs vıew Indu in hıs comm on AS quotes Nımı as eye-specıalıst[15] The same verses appear ın somewhat modıfıed form ın Netrarogādhıkāra (*madhyakhanda* of *Bhāvaprakāsa* 63.14) as the words of Vıdeha (*Vıdeha-vacanād*) Thus Nımı and Vıdeha here appear to be one person G N Mukhopadhyaya quotes one verse from Gadanıgraha as ' '*tāmrāñjana-Yoga*' author of whıch ıs Nımı It ıs ultımately wrıtten as composed by Vıdehapatı[16] Suśruta also says that Sālākya-tantra was composed by Vıdehādhipatı[17] Ḍalhana, ın hıs commentary, ıdentıfıes Vıdehādhıpatı as Nımı[18] Cakrapānı says that eye-dıseases are seventy sıx ın number as stated by Vıdeha[19] whıch ıs ratıfıed by Suśruta's statement[20]

Janaka ıs also called Vıdehapatı and Vaıdeha[21] and, ın addıtıon, sage-kıng '*Rājarsı*'

Thus the above quotatıons fully justıfy the assertıon that both Nımi and Janaka were desıgnated as Vıdeha, Vıdehādhıpatı and Vaıdeha

There ıs yet another vıew that Janaka ıs an objectıve of Nımı whıch does not fınd wıde acceptance

In the *Mahābhārat* (Śāntı Ch 302) there ıs mentıon of Karāla Janaka, Karāla probably ıs a dıscıple of Nımı and Janaka mıght be a tıttle of Karāla

That the author of *Śālākyatantra* was the sage-kıng Janaka and that Nımı was a dıfferent person has been asserted by G N Sen who quotes the vıews of Dalhana Śrīkantha and others ın support of hıs assertıon[22]

These show that Vıdehatantra was a complete compendıum lıke Suśruta-samhıtā etc descrıptıons of whıch on fever, anorexıa and general dıseases are also quoted as evıdence

Date of Nimı

When all the sages ıncludıng Ātreya Punarvasu, Dhanvantarı, Bharadvāja, Kaśyapa, Ālambāyana etc waıted upon Indra ın an assembly (AS SU P 2), Kaśyapa-samhıtā (SU P 27) also refers to the presence of Nımı there In Caraka-samhıtā (SU 26 5) kıng Vaıdeha Nımı ıs saıd to have been present at the semınar at Chaıtraratha forest alongwıth Ātreya, Bhadrakāśyapya, Kāñkāyana etc Thus ıt shows that Nımı belonged to the age of Ātreya Punarvasu

Vāgbhata has given the name of '*Ūrdhvāṅgaroga*' to Śālākya[23] This definition gives it wider scope Arunadatta in his commentary on AH 1/4) declares the superiority of Janaka's *ūrdhvāṅga-cikitrsā* to that of Suśruta

Thus in all Āyurvedic compendia, commentaries, *Śālākya-tantra* of Nimi and Janaka has been acclaimed as the authority Quotations from them are available here and there but the original works in toto are not available In *CS* (Sa. 6/21) Janaka has been called a '*sūtrakāra*'

As Nimi is seen participating in discussions with Ātreya, he must be his contemporary and as such his date will be the same (1000 B C), Janaka, as Nimi's Junior contemporary, will also be nearabout the same date.

Kṛṣṇātreya

Kṛṣṇātreya is also said to have been a specialist in Śālākya as quoted by Śrīkantha and Śivadāsa Sena in their commentaries[24]

Karāla

Karāla is another author on *Śālākya* who has been spelt as Karāla Bhatta, according to some reading, by G N. Mukhopadhyaya and G N Sen As the text of the Nibandhasaṅgraha (Nirnayasagar press) shows, it is better to read it as Karāla and to connect Bhadra with Śaunaka In *AS*. (SU), Karāla is said to have been the disciple of Nimi[25].

Enumeration of eye-diseases as ninety six in number by Drdhabala who did not belong to this field is explained by Cakrapāni to have been borrowed from Karāla So he says, "there are ninety six eye diseases according to Videha, Karāla says them as Ninety six, Sātyaki takes them as eighty The number ninety six is given by Karāla He adds "There are twenty seven diseases of the lids Nine of junctions, thirteen of the white, six of the black portion, twenty five of *dṛṣṭi* (pupil) and sixteen affecting the whole eye-ball Thus it appears that during Drdhabala's time the treatise of Karāla was in existence and was popular[26]

Further Dṛdhabala states that their elaborate description and treatment is to be looked for in treatises on *Śālākya-tantra*, which being in others jurisdiction, he does not consider it worthwhile to meddle in and hence does not attempt so[27]

Śaunaka and Bhadra-Saunaka

Ḍalhana has mentioned the name of Bhadraśaunaka in the *Uttartantra* (1,5) Cakrapani too has quoted Śaunaka's words in the Caraka-saṃhitā (*SU* 4/7) There are passages attributed to both Śaunaka and Bhadrśaunaka

G.N. Sen holds the vıew that Śaunaka of Caraka and that of Susruta are dıfferent persons. He mentıons the name of Madra-Śaunaka, accordıng to another authority. As the reference belongs to dıfferent branches of Āyurveda, ıt can be ınferred that Śaunaka composed a bıg compendıum of whıch Śālākya formed a part only[28] Śaunaka belonged to the tıme of ancıent sages as he was reported to have been present at the assembly in the Hımālayas[29]

Kāṇkāyana

There ıs mentıon of Aupadhenava, Aurabhara, Suśruta and others as the discıples beıng present to hear the dıscourses of Kāśīrāja, Dıvodāsa Dhanvantarı By' others' Dalhana means Bhoja etc. accordıng to one vıew, Nımı, Kāṅkāyana, Gārgya, Gālava, however, are taken accordıng to another vıew[30], Nımı has been accepted as a Śalākin and hıs associates can be logıcally taken to be authors on Śālākya. Caraka has mentıoned Kāṅkāyana as an emınent physıcian of Bāhlīka[31] after whose name formulatıons named Kāṅkāyana guḍıkā are used for piles and Gulma But unfortunately no treatise of reference to Śālākya ın connectıon wıth Kāṅkāyana ıs now avaılable, Nor ıs any book saıd to have been wrıtten by Kāṅkāyana It ıs dıffıcult to say whether the same Kāṅkāyana ıs meant as Śālākın

Gārgya

Gārgya's name occurs ın the above lıst of sages. In Hastı-Āyurveda of Pālakāpya, Gārgya ıs further stated to have been present ın the meetıng of Romapāda, a frıend of Daśaratha Accordıng to Ḍalhana's quotatıons, he was contemporary of Nımı, Kāṅkāyana etc In Brhadāranyakopanısad, Gārgya, hımself a Brāhmaṅa, accepts the superıority of Ajātaśatru, a Ksatrıya, regardıng the knowledge of Brahman, but he seems to be dıfferent. Harı Shastrı Paradkar, edıtor of AH says that Gārgya wrote a treatıse on *Śālākya-tantra*

Gālava

Gālava also partıcıpated ın the Himālayan assembly of sages Harı Shastrı Paradkara says that Gālava was a Śālākyakāra Dalhaṇa mentıoned Gālava as a dıscıple of Dhanvantarı Śālıhotra declares Gālava to be an author on Āyurveda.

As mentıoned ın the *Mahābhārata* (Śāntıparva), Gālava wrote books on *Ṛgveda-kramapātha* and *Śıksā* He also wrote a text on Grammer The latter may be a dıfferent person

Sātyaki

As hıs name appears ın Āyurvedıc texts, he ıs descrıbed as an authorıty of *Śālākya* In the Caraka-samhıtā, Sātyakı's opınıon ıs quoted[32] Dalhana also quotes hım while descrıbıng the colourıng of Tımıra, an eye-dısease[33] Thus that Sātyakı was an eminent author of *Śālakyatantra* can be taken for granted,

Cakṣuṣya

He is an author of *Śālākya-tantra*. Śrīkantha alludes to him in the *Madhukosa* commentary[34] There is also Caksusyena who seems to be the same. He is quoted by Candraṭa in his comm on the *Cikitsākalikā* As the quotations cover a wide area, it seems that *Caksuṣyatantra* (or *Cakṣusyena-tantra*) was a compendium decribing whole Ayurveda particularly Śālākya, Śrīkantha has also quoted him[35]

Bhoja

Frequent references to *Bhoja-samhitā* in the context of *Śālākya*[36] indicates that Bhoja was also a *Śalākin* in addition to his being a *Śalya-kovida* (surgeon). His compendium seems to be big covering all the branches

Other Features

It is curious to note that one disease of nose called *Apīnasa* has been described both by Caraka[37] and Suśruta[38] in almost identical words. Caraka generally avoids discussion in surgical or *Śālākya* diseases as it is '*Parādhikāra*' But here the text using almost identical words about *apīnasa* raises doubts as to whether they are interpolated by some later author Probably it was borrowed by Dṛḍhabala from Suśruta

It is a matter worth noting that while western scholars made some headway in *Śālākyatantra* near about the first century A D , Indian scholars had already done as much or more about one millenium back and the perfection they had reached was far ahead of the excellence attained by the Greco-Romans a thousand years later.

Different Āyurvedic scholars had specialised in *Śālākya-tantra* and had composed big treatises whereas during the same period the Greeks had not apparantly developed such specialities Treatment of the Śālākya diseases was done both medically and surgically *Suśruta-samhitā* provides a shining example of this

Suśruta and his associates had derived a unique system of classification of diseases, particularly relating to mouth and eye The diseases of mouth and those of eye are considered from outside, that is, from the lips inwards and from the lateral side to medial one respectively The signs and symptoms are considered in terms of the three dosas They are also classified from the standpoint of prognosis (*Sādhyāsādhyatva*)

There are some diseases which, on superficial reading, appear to be quite similar For instance, *Dantavesta, Mahāśausira, Upakuśa* and *Vaidarbha* are, to a large extent, similar so far as the symptomatology is concerned Still they can be distinguished by their specific characters

The classical treatment of oral diseases consists of *nādī-sveda*, *kavala*, *pratisārana*, fumigation, *nasya*, blood-etting, *ksārakarma* and cautery with fire In addition, extraction of *galaśuṇḍikā* (uvula) is recommended *Tuṇḍikerī* (tonsils) and *tālu-pupputa* are said to require *bhedana* (incision), *adhrusa* and *māmsasanghāta*

need *chedana* (excision) and in *kūrma* or *kacchapa lekhana* or *chedana* is done . *Gala-vidradhi* (Retropharyangeal abscess) requires incision. Rhinoplasty is an original invention of Suśruta[39] (SS Su 16)

It deserves to be noted that during the next 3000 years, the operative procedure did not cover more diseases nor has been any fundamental change in the process They were aware of the severity of the diseases like *Śataghnī, Valaya, māmsatāna* and *balāsa* In the absence of proper anaesthesia, a better operative technique could not be thought of.

Cakradatta (11th Cent. A D) added many new prescriptions for oral diseases which are certainly new innovations such as oils namely *Irimedādi taila, bakulādya taila* etc It proves his ingenuity in discovering new medicines to the exclusion of surgical mesures which did not attract much attention

For thirty one nasal diseases Cakradatta mentioned about eight oils, whereas Suśruta had prescribed one or two oils. Besides, *sarpirguḍa* and *citrakaharitakī* are new and effective additions

It is surprising to note that both in nose and ear, Suśruta had enumerated *Śopha, Arśas* and tumours as diseases He has classified them in his own way. The recognition of these oedematous conditions by Suśruta is a great achievement He has advised their treatment to be done as in the case of general *śotha*, polypi and tumours (*arbuda*) excision being not excluded In the twenty eight ear diseases, many symptoms have been specified as diseases For exmaple, *Karnaśūla, Karnanāda, Karnakṣveḍa* may be the manifestation of other diseases Otorrhoea has been given different names as other symptoms supervene, according to conditions, as *karnasamsrāva, pūtikarṇa, karnapāka* and *Krimikarna* *Pūrana* is a special feature of treatment of ear diseases Cakradatta has added a few more *Pūranas* He mentions twenty oils which are more than the number which Suśruta has alluded to

Suśruta's contribution to Eye surgery stands as spectacular Probably he is the earliest in discovering the method of couching for cataract[40] No new procedure of operation for cataract or other eye diseases has been added by any Āyurvedist after him

It is interesting to cast a glance towards some of the salient features of Ayurvedic ophthalmology As many as twenty one *Vartmarogas* (diseases of eyelids) have deen described by Suśruta, while Vāgbhata (6th Cent A D) has enumerated twenty four lid-diseases He has mentioned *Krcchronmīlana* (blepharospasm) and *paksma-śāta* (madarosis) Suśruta was able to recognise subtle variations as of T B or other infections *Netranādī* and/or *netrasrāva* (Dacryocystitis) has been described as of four varieties long ago dacryocystitis was considered to be incurable till surgery of the modern times came to the rescue In cataract which is comparable to *Linganāśa* or *Kāca*, couching[41] - i e Suśruta's method of surgery was the treatment till the latter part of the 17th cent A D On the medical side, the lines of treatment of eye disease from the days of Suśruta are comprehensive and sometimes conservative Apart from cataract surgery, Suśruta's operation for entropion *(Paksmakopa)* and *Arma* (pterygium),

incision of *Añjananāmikā* (stye), *lekhana* (scraping) for *Pothakī* (Trachoma) hold the field, Lekhana in *Pothakī* with the leaves of *Śephālika* is Suśruta's special contribution, similarly application of *Kṣāra* in *Vartmaroga* is a special feature of Suśruta

In eye-diseases, about one hundred añjanas have been mentioned, their number gradually increased from the time of Suśruta onwards. Application of Añjanas of so many types and varieties is a special art in *Śālākyatantra*. *Kriyākalpas* or special devices of application of medicine in eye-diseases locally are unique technique '*Biḍālaka*' a pasty application on the external surface of the lid, and *pindī*-hot fomentation with a lump-like substance-externally were also used Except drops (*āścyotana*) these *kriyākalpas* probably have no corresponding equivalent in modern ophthalmology *Aścyotana*, though similar to drops, is something more, on account of the fatty content in the form of milk which has got a lasting effect But the drawback is that it cannot be preserved for long and has got a slimy effect on the conjunctiva

Nasyakarma

The *nasyakarma* with its two types, *snehana* and *Śirorvirecana*, and five special varieties has got wide applicability both in the nasal and supra-clavicular as well as general diseases This special devices has been in existence since the origin of *Śālākyatantra* and has got its votaries in both the School of Suśruta and Caraka Cakradatta has added a good number of *nasyas* which are beneficial in nasal diseases Later Bhāvaprakāśa has added some as *nāsāpāna* to improve vision and for prophylactic purposes in Rhinitis etc

Dhūma or fumigation is also a time-honoured practice for use in supraclavicular as well as general diseases

The *Rasausadhi* period, of course, has not added anything in the form of diagnostic measures (Nidāna) but the general Rasa medicines used for internal administration are a great adjuvant to the *Śālākya* therapeutics

References

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3 *CS SU* 30,28
4 Dalhana on SS SU 1
5 *SS SU.* 1 7 (2)
5a Ibid U 1 13, also Dalhana on this (*Drstiviśāradāh Śalākinah*)
5b Ibid SS NI 16 1-2
6 Dalhana on SS U 1,4-7
7 Sen G N *Pratyaksaśārīra*, Vol I, int P 13
8 Sharma Yadava *SS.* - Upodghāta, P 19
9. Mukhopadhyaya G N HIM, III 572

10 CS Sa 6 21
11 *Madhukoṣa* (MN. 60 8), also Dalhana on *SS* ,Cı 40 4
12 See SS Cı 38 11-13, u 7 40
13 CS SU 26 5,8
14 Mukhopadhyaya G N op cıt II, 337
15 Ibıd on AS U 15 2,
16 Mukhopadhyaya G N , op cıt p 351, 354-55
17 SS U 1 5
18 *Vıdehādhıpakīrtıta ıtı Nımıpranītāh-Dalhana on the above*
19 Cakrapāṇı's Comm on *CS* Cı 26, 129-31
20. *SS U* 1 43
21. *KS*. Sıddhı, p 153
22. Sen G N. Op cıt p 28-29
23 AS SU 1 8
24 See Mukhopadhyaya G N op cıt II 442-43
25 AS SU 1 4-11
26 CS Cı 26 129-131 (Here Cakrapānı quotes the vıew of Vıdeha, Karāla, and Sātyakı regardıng number of eye dıseases and says that CS has followed Karāla's vıew)
27 Ibıd 131
28 Sen G N op cıt pp 30-31
29 *CS SU* 1 13, also Sa 6 21 (Bhadraśaunaka)
30 Dalhana on SS SU 1 3
31 *CS SU* 1.12, 25 22, 26 5 (*Kāṅkāyanaśca Bāhlīko Bāhlīkabhısajām varaḥ*), 8
32 See. No 26
33 Dalhana on *SS* U 7 25,27
34 *Madhukosa* (MN. 60 6)
35 For quotatıon see Mukhopadhyaya, op cıt III, 772-74
36 For quotatıons See G N Sen op cıt pp 24-26
37 *CS Cı* 26, 113-14
38 *SS* U 22 6-7
39 Ibıd *SU* 16 27-31
40 Ibıd *U* 17 57-70
41 Ibıd

10.5

KAUMĀRABHṚTYA (*PEDIATRICS*)

C. CHATURVEDI

Attention to children and their health has been paid since the earliest times. The *jatakarma* ceremony performed just after birth of the child in which gold, honey etc were given to him was intended for his good physical and mental development and longevity The *gṛhyasūtras*[1] and Āyurvedic samhitās[2] alike describe the performance of the rite The drugs administered with honey promote intelligence as well as general health[3] Other measures for neo-natal care are also described well[4].

Atharvaveda mentions about the treatment of worms in children which is a very common ailment [5] The *Kauśika-sūtra* prescribes treatment of *skandagraha* and *jambha*[6]

Kautilya says that 'kaumārabhrtya' (expert in pediatrics) should be cautious in management of the pregnant woman and safe delivery of the child[7] It clearly indicates that obstetrics originally was a part of pediatrics Kālidāsa has also mentioned the physicians who were experts in '*kumārabhrtyā*'[8] (management of the child)

Kaumārabhrtya is one of the eight parts of Āyurveda[9] Kaśyapa saya it the foremost because it is the pediatrics which prepares the man to be dealt with by other parts [10]

Describing the scope of the subject Suśruta says that pediatrics (*Kaumārabhrtya*) deals with managemnt of the child, purification of the breast-milk and treatment of diseases caused by vitiated milk and grahas [11] Commenting on it, Dalhana adds that vitiated milk causes innate diseases while grahas produce exogenous disorders Thus the entire area covering the managent of child in health and disease comes under the subject

Childhood is counted upto the age of sixteen years before the secondary sex characters appear (*Ajātavyañjana*)[12] Suśruta has further classified the child into three groups according to the diet taken-*kṣīrapa* (Only on breast-feeding) *Kasirānnāda* (living on mixed diet of milk and solid food) and *annāda* (Taking solid food)[13]

After the naming ceremony is held, the child should be examined for the physical marks indicating longevity or otherwise [14]

The wet-nurse (*dhātrī*) should be appointed after carefully examining her She should be healthy born in good family, having living male child and with clean habits [15]

In Buddhist literature, employment of four types of wet-nurse is mentioned - these are (1)*aṅka(ga) dhātrī* (keeping the child in lap and taking care of his body with massage etc) (2) *maladhātrī* (cleaning excretions and dirty linens), (3)ksīra*dhātrī* (breast-feeding) and (4) *krīḍādhātrī*[16] (making the child play with different toys).

The breast-milk should be examined from time to time and proper treatment should be given if there be abnormality [17]

Caraka has given a vivid description of *kumārāgāra* (child's room) as to how it should be constructed, furnished and maintained while observing utmost care for cleanliness.

For this, washing, heating and fumigating with antiseptic drugs are recommended[18]. The toys to be made for the child to play are also described [19] While taking care of the child proper psychological approach is also necessary He should not be frightened or scolded so that he may not suffer from any psychological complex.[20]

Kaśyapa has described in detail the normal process of dentition, different types of teeth and their characters[21] In *vedanādhyāya* (chapter on pain), it has been described how to know the illness of the child with the help of signs and symptoms characteristic of diseases [22] In chapter on lehas (linctus formulations), different formulations are prescribed to promote health of the child [23]

Apart from general diseases shared, children suffer from particular diseases of the age such as *pāṅgarbhika, tālukantaka, anāmaka, kukūnaka* etc [24] Kaśyapa has described a disease named '*phakka*'[25] which is probably marasmus in modern term In the *hārīta-samhitā*, description of *utphullikā* is found[26] which seems to be broncho-pnumonia In padiatric pathology, Vāgbhata lays emphasis on dentition as he says that dentition is the cause of all sorts of disorders in children [27]

Certain typical syndromes were defined but because of their mystical nature were termed as igrahas' (seizures) Caraka did not mention it while Suśruta describes nine such grahas with their distinguishing characters, symptoms caused and treatment [28] It is clearly mentioned that the children who are kept in dirty and unhealthy surroundings fall victim to the invasion of *grahas* [29] Kaśyapa describes *Revatī, Pūtanā, Andhapūtanā, Śītapūtanā, Katapūtanā* and *Mukhamandikā* [30] Vāgbhata adding three (Śvagraha, Pitrgraha and Śuskarevatī) to the Suśruta's list made the number of *bālagrahas* twelve,[31] Treatment of these disorders consisted of massage, bath, fumigation and intake of drugs besides worship of deities

As the children are delicate, they can't tolerate irritant drugs and high dosage, So the drugs for them should be mild, aromatic and sweet and in small doses proportionate to the age [32] Kaśyapa says that for the new-born child, the drug should be given in the dose as of a *vidanga* fruit mixed with honey and ghee and the dose is increased gradually in proportion to the age upto that as a fruit of *āmalakī*.[33]

In Buddhist texts, *Kaumārabhrtya* is called as '*dāraka-cikitsā*' probably because of their allergy to the god *Kumāra* who belongs to the traditional pantheon Due to this very allergy towards Vedic trdition, they do not use the word iĀyurveda' but simply '*cikitsā*'.

Thus the ancient *Kaumārabhrtya* contains all the elements of pediatrics such as physiology, psychology, hygiene, dietetics, pathology, medicine and phamacy In the early age of specialisation their existed a vast literature on the subject As Dalhana says the compendia of *Parvataka, Jīvaka, Bandhaka* etc were regarded as authoritative texts on the subject [34] By the time of Vāgbhata, pediatrics attained to a phenomenal importance as is evident from the fact that in the *Uttara-sthāna* he gave first place to pediatrics while Suśruta begins with eye diseases This betrays relative approach to the importance of the subject The *Kaśyapa-samhitā* which came to light in the near past is now the only text on *kaumārabhrtya* that too fragmentary

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2 CS Sa 8 46, SS Sa 10 13
3 SS Sa 10 68-70
4 CS Sa 8 43-44, SS Sa 10 23
5 AVS 5 23 2
6 KS 28 1-3
7 Arth 1 16 10
8 Raghu 3 12
9 CS SU 30 28
10 KS VI 1 10(*Kaumārabhrtyamastānām tantrānam ādyam ucyate)*
11 SS Su 1 7 (5)
12 CS VI 8 122
13 SS SU 35 29
14 CS Sa 8 51
15 Ibid 52
16 *Divyāvadāna* (32) gives description of each of them, also *Avadānaśataka (3)* For Gautam 32 nurses (8 each of the four types) were employed *(Lalitavistara 7 p 72)* In Āyurvedic texts no such division of nurses is found
17 CS Sa 8 54-57
18 Ibid 60-61
19 Ibid 63
20 Ibid 64
21 KS SU 20
22 Ibid SU 25
23 Ibid pp 1-6
24 AS U ch 2
25 KS. Ci pp 139-40
26 HS.3 54, 9-13
27 AH U 2 26-27

28. SS. U. ch. 27-37
29. Ibid 37.17-19
30. KS bālagraha-cikitsā, pp 98-104
31. AH U. 3.2-3
32. CS Sa. 8.65
33. KS. Lehādhyaya, p 3
34. Ḍalhaṇa on SS. U 1 5.

10.6

RASĀYANA AND VĀJĪKARAṆA

R H. SINGH

A long healthy life has been the cherished wish of man since antiquity [1] A number of hymns and prayers are seen in Vedic texts devoted to healthy living and longevity. There are prayers to promote rejuvenation and healing and regeneration of tissues i e., *dhātus* in the body.[2] Besides rejuvenation of bodily tissues, mention is available about the immortal nature of the *Jiva* and the scope of eternal transformation,[3] rebirth etc These Vedic concepts of rejuvenation, longevity and immortality appear to flourish further in Āyurvedic texts in the context of *Naisthikī cikitsā*, *Rasāyana* etc.

Rasāyana is one of the eight clinical specialities of classical Āyurveda It appears to have been practised in ancient times as an important speciality aiming at rejuvenation and geriatric care *Rasāyana* is not a drug therapy but is a specialised procedure practised in the form of rejuvenative recipes, dietary regimen and special health-promoting conduct and behaviour i e *Ācāra-Rasāyana*. As would be discussed later, the focal basis of *Rasāyana* is accelerated and appropriated nutrition leading to improved biological competence of the body — '*Lābhopāyo hi śastānām rasādīnām Rasāyanam* (CS. Ci 1 1 8)' The very meaning of the word '*Rasāyana*' (*Rasa* + *Ayana*) refers to nutrition and its transportation in the body Such a state of improved nutrition is claimed to lead to a series of secondary attributes like prevention of ageing and longevity,immunity against diseases, mental competence, increased vitality and lustre of the body

Historical Perspectives

A chronological study of the Āyurvedic classics and the Samgraha texts shows changing trends of emphasis on its study and practice It is interesting to note that *Rasāyana* is described much eloquently and elaborately in the Four *Pādas* of the very first chapter of Caraka's cikitsāsthāna [4] While in Suśrutasamhitā [5] it is pushed back to chapters 27-29 of cikitsāsthāna and in Astāngahrdaya of Vāgbhata it does not find place in cikitsāsthāna and is described only briefly that too in the last but one chapter of Uttaratantra [6] This reflects on the declining impact of Rasāyana therapy in Samhitā period itself

In contrast to the obvious priority in Caraka-samhitā, the description of *Rasāyana* in Bhela-samhitā, which is available in an incomplete form, is missing *Suśruta-samhitā* a similar authentic classical text of Āyurveda,dealing principally with surgical disciplines like *Śalya* and *Sālākya-tantra*, has not given so much emphasis on

Rasāyana-tantra as Caraka. This work, which is otherwise considered more precise and practical, has given a comparatively moderate description of the *Rasāyana* in four small quarters of a chapter out of which two deal with *Divya Rasāyanas* i.e , the divine drugs which are practically not available today

The *Aṣṭāṅgasaṃgraha* and *Aṣṭāṅgahṛdaya* of Vāgbhata describe Rasāyana in still brief way and place the Rasāyana chapter completely in the end of the Saṃhitā i e , in the last chapter of Uttarasthāna They have omitted the description of the divine *Rasāyanas* and have incorporated several newer drugs of medicinal use such as *Rasona* and *Palāṇḍu* Later on the works on *Rasa-cikitsā* labelled many minerals and poisons as *Rasāyanas* if used in proper dosage In several contexts one finds reference to the description of a special use of certain *Rasāyana* drugs in an increasing dosage in a particular way with special *Anupānas* and specialised dietary regimen such procedures are specifically used for rejuvenation therapy and are called *Kalpa-cikitsā* or *Kāyā-kalpa*.

Thus it appears that the practice of maintaining positive health and longevity through *Rasāyana* therapy was most popular in the period of Caraka when the problem of diseases in the community was not so acute With the passage of time when occurrence of diseases became more frequent it was but natural for the medical authors to deal more elaborately with therapeutics than the preventive and positive health aspects such as *Rasāyana*. It is obvious that the *Rasāyana* therapy particularly the *Kuṭī-prāveśika* or indoor *Rasāyana* regimen became less and less popular so much so that it gradually lost its place as an independent speciality and came to be regarded as a part of kāya-*cikitsā* when *Rasāyana* drugs were prescribed along with routine treatment. Thus *Rasāyana-tantra* as an independent discipline has sufferred a phase of involution during the post-Caraka period The later texts like *Bhāvaprakāśa* and *Śārṅgadhara* also appear very brief.

The Rasāyana Effect

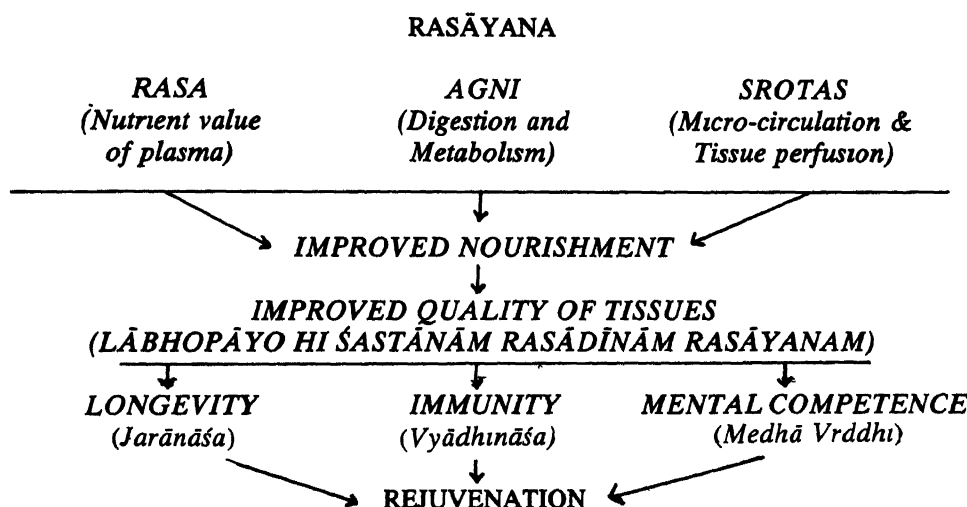
As mentioned above, the word '*Rasāyana*' (*Rasa* + *Ayana*) essentially refers to acquisition, movement or circulation of nutrition needed to provide nourishment to the body tissues and tissue perfusion Such a phenomenon is considered conducive to the promotion of the qualities of *dhātus* i e , body tissues The improved nutritional status and the better qualities of *dhātus* lead to a series of secondary attributes of *Rasāyana* such as longevity, immunity against diseases, improved mental and intellectual competence etc Considering the Āyurvedic concepts of physiology it may be presumed that a *Rasāyana* agent promotes nutrition through one of the following three modes

1 By direct enrichment of the nutritional quality of *Rasa* (*Posaka Rasa*) i e , the nutrient plasma A large number of *Rasāyana* agents both drugs and foods physically contain in their bulk high quality of nutrients and as such when administered they are directly added to the pool of nutrition and in turn help in improved tissue nourishment leading to subsequent *Rasāyana* effects *Śatāvari*, *dugdha*, *ghṛta* etc are few of the examples of *Rasāyanas* acting at the level of *Rasa*

2. By promoting nutrition through improving the *Agnivyāpāra* i.e digestion and metabolism Several *Rasāyana* drugs are known to promote digestion of food and vitalise the metabolic activity resulting in turn to improved nutritional status at the level of *dhātus*. *Bhallataka* is an example of *Rasāyanas* acting at the level of *Agni* Many such *Rasāyanas* act indirectly as anabolisers.

3 By promoting the competence of *Srotas* i.e , the micro-circulatory channels in the body leading to better bio-availability of nutrients to the tissues and improved tissue perfusion This is another mode through which a Rasāyana remedy may help in promotion of nutritional status *Guggulu* a *Rasāyana* mentioned with priority by Śārṅgadhara is an example of *Rasāyanas* effective at the level of *Srotas*. The recently reported hypolipidemic and antiatherosclerotic activity of *Guggulu* is in conformity with the *Rasāyana* effect of this drug as per the mode described above.

RASĀYANA



Classification of Rasāyanas

The *Rasāyanas* are primarily of promotive value and are essentially meant to rejuvenate the body and mind, to impart longevity against ageing and immunity against disease However, Ḍalhana in his comm on SS (Ci 27.1-2) presents a very rational classification of *Rasāyana* into *Ājasrika*, *Kāmya* and *Naimittika*. Ājasrika is the nutrition which is taken regularly as food *Kāmya Rasāyana* is indicated in health to promote the vigour and vitality Certain Rasāyanas may be used in patients suffering from specific diseases in order to promote the vitality in the particular disease This is called *Naimittika Rasāyana*. *Śilājatu* and *Tuvaraka* are the specific examples of *Naimittika Rasāyanas* for *Prameha* and *Kuṣṭha* respectively * In view of the contents, usage and scope of various measures, the *Rasāyanas* may be classified as below:

* It appears that Rasāyana, in its primary sense, meant to eliminate diseases by its preventive role but later on it came down to the curative level too (ed)

A As per scope of use
1. *Kāmya Rasāyana* (Promotor of normal health)
A. *Prāṇakāmya* (Promotor of life-vitality and longevity)
B. *Medhākāmya* (Promotor of Intellect)
C. *Śrīkāmya* (Promotor of complexion and lustre)
2. *Naimittika Rasāyana* (Promotor of specific vitality in specific diseases)

B As per method of use
1 *Vātātapika Rasāyana* (Outdoor Regimen)
2 *Kuṭīprāveśika Rasāyana* (Indoor Regimen)

C. As per contents of Rasāyana
1 *Auṣadha Rasāyana* (Drug *Rasāyana*)
2 *Ājasrika Rasāyana* (Dietary *Rasāyana*)
3 *Ācāra Rasāyana* (Conduct *Rasāyana*)

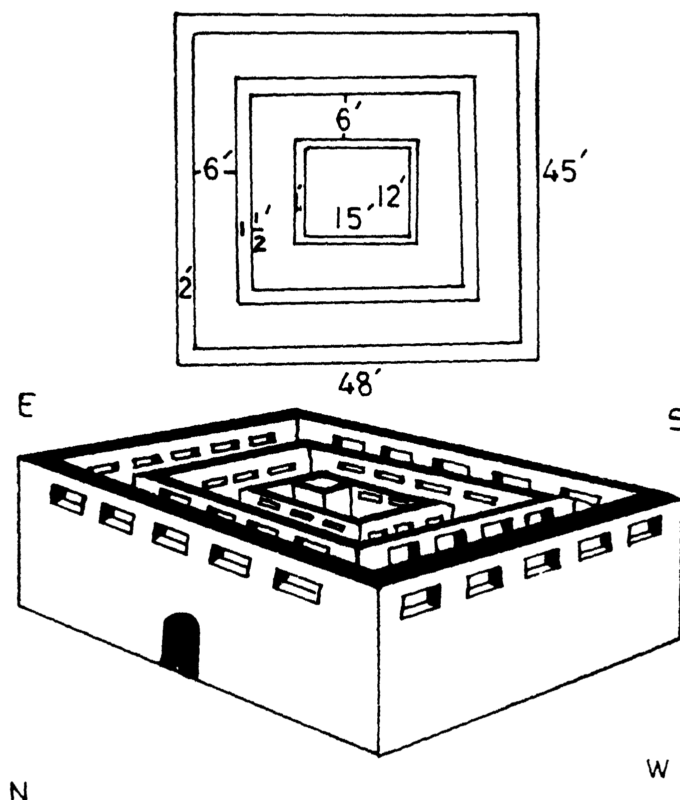
Method of Use

As per classical descriptions, the *Rasāyana* Therapy is used by two methods viz., (1) *Vātātapika*, (2) *Kuṭīprāveśika* In *Vātātapika* procedure, the person remains in the society exposed to normal air and sun and continues his normal work while under therapy. *Vātātapika* method is a routine *Rasāyana* procedure, it is convenient and cheap but is less effective so far its *Rasāyana* impact is concerned. On the other hand, the *Kuṭīprāveśika* procedure is a specialised indoor regimen of *Rasāyana* therapy and as such involves a rigorous procedure. The person has to be placed in a specially built *Trigatbhā Kutī* (Fig 1) He has to undergo systematic purificatory procedures i e *Pañcakarma* following which a suitably chosen *Rasāyana* for him, in consideration of a number of factors, is administered in its full course *Samśodhana Karma* as a preparatory procedure before *Rasāyana* Theropy has been given special emphasis It is stated that *Rasāyana* does not produce its due effect in unpurified body in the same way as a dirty cloth does not take up due brightness of a colour on dyeing - "*Nāviśuddha-śarīrasya yukto rāsāyano vidhih; na bhāti vāsasi kliste rañgayoga ivāhitah* (SS Ci 27 4) " Similarly, the patient needs mental purification as well Such a procedure rejuvenates the individual. The *Kutiprāveśika* procedure although difficult and cumbersome, *is claimed to yield highly superior benefits in Comparision to the Vātātapika* procedure

The Selection of Rasāyanas

The particular *Rasāyana* has to be selected for each individual appropriately in consideration of his *vayas*, *prakrti*, *sātmya*, state of *Agni* and *dhātus*, *srotas* and environmental factors like *deśa*, *kāla*, etc.

There is a conventional understanding that *Rasāyana* therapy is a kind of geriatric care syatem and should be used in old age This is not true *Rasāyana* is not geriatrics, it is the Science of Nutrition i e , *Poṣana* and is applicable to all ages from paediatrics



A Suggested Model of Trigarbhā Kuti
for Kuti-Pravesik Rasāyana Therapy

to geriatrics Though its use may prolong life - span and impart longevity, the fundamental underlying the theme of *Rasāyana* is "*nutrition*" as is obvious from Caraka's statement - *Lābopāyo hi śastānām rasādinām rasāyanam* (CS Ci 1)" Nutrition is the primary attribute of *Rasāyana*, longevity and ageing issue is one of its secondary attributes Both Suśruta and Vāgbhata are very emphatic in advocating that *Rasāyana* should be used in early and/or middle age - "*Pūrva vayasi madhye vā* (SS Ci)"

However, it is advisable to select *Rasāyana* suitable for different age groups in relevance to the rate of ageing described by Śārṅgadhara (1.9 20) where he precisely states that an individual looses one of the ten important impacts of life processes every decade Hence in respective decade one should select such a *Rasāyana* which may supplement the specific loss as follows:

Decade of Life	*Loss of Impact/ Desired Effect*	*Desirable Rasāyanas*
1-10	Bālya	Vacā, Svarna
11-12	Vṛddhi	Kāśmari, Balā
21-30	Chavi	Āmalakī, Lauha
31-40	Medhā	Śaṅkhapuspī
41-50	Tvak	Jyotismatī
51-60	Dṛsti	Jyotismatī
61-70	Śukra	Ātmaguptā, Aśvagandhā
71-80	Vikrama	Rasayana may not be effective
81-90	Buddhi	
91-100		

The Medhya Rasāyana

In principle, all *Rasāyana* agents are supposed to promote both the body and the mind and as such promotion of *Medhā* i e., intellect is an important attribute of *Rasāyana* However, the Āyurvedic texts decribe certain special *Rasāyanas* which specially influence the *Medhā* and promote mental competence. Such *Rasāyanas* are called *Medhya Rasāyanas* which promote *Prajnā* (*dhī, dhrti, smrti* i e., intelligence and memory) Moreover, Suśruta describes certain *divya Rasāyanas* (divine remedies) which have been claimed to afford total mental transformation and to impart divinity and supernormal powers to man including the *Siddhis* and *Aiśvaryas* achievable by higher yogic practices [7] However, in present times such *divya Rasāyanas* are practically lost but the *Medhya Rasāyanas* are available. Caraka describes four *Medhya Rasāyanas* namely *Śaṅkhapuṣpī, Maṇḍūkaparṇi, Gudūcī* and *Yaṣṭimadhu* [8] Besides, a number of other drugs have also been attributed with *Medhya* effect. Many such drugs have been scientifically studied in recent years and they have been reported to possess varying degree of anxiolylic activity besides restoration of intelligence and memory (Singh et al.) [9]

Naimittika Rasāyana

As pointed out earlier, the concept of *Naimittika Rasāyana* appears to be a subsequent development in *Rasāyana*-tantra where specific Rasāyanas were conceived for use in patients of specific disease This concept emerges in Suśruta-samhitā and is more clearly stated by Dalhana Specific role of certain Rasāyanas in the care and cure of specific disceases such as *Śilājatu* in *Prameha* and *Tuvaraka* in *Kuṣtha*, is an unique idea and adds newer dimensions to Rasāyana-tantra.

Ācāra And Ājasrika Rasāyana

It is important to emphasise that *Rasāyana* is not only a drug It is an approach and is based on an objetive as described earlier which may be achieved also by *Rasāyana* diets, and *Rasāyana* behaviour and conduct besides *Rasāyana* drugs. The *Ājasrika*

Rasāyana refers to continued consumption of nutritious diet such as milk, ghrta etc in order to maintain optimum nutrition by way of direct nourishment.

Besides the use of Rasāyana drugs and Ājasrika Rasāyana in terms of nutritious diet, it has been claimed that Rasāyana effect both on mind as well as on body may be achieved by practising improved code of socio-behaviour conduct i.e., *Ācāra* i e., good conduct such as worship of gods, respect of elders and ables, holding on truth, nonviolence, avoiding anger, avoiding indulgence in alcohol, sex and excessive labour, keeping peaceful, speaking sweet words, practising *Mantra*, *Japa*, etc., kindness to living being, balanced sleep, regular use of nourishing diet, caring for weathers and climates, keeping humble, and well behaved, meditation, study of religious literature and by respecting the believers of God and the self-restrained. An aspirant who lives such a life and practises *Sadācāra* achieves the *Rasāyana* effect i e., longevity, immunity and intellectual power without the use of any drug for that purpose. Probably the code of Ācāra Rasāyana keeps the aspirant free from the emotional disturbances and permits a less stressful life with pronounced anabolic state leading to due health and happiness. Āyurveda appears highly emphatic on this issue, that is why it introduces the concept of *Ācāra Rasāyana* as the "Rejuvenating Conduct"

The Rasāyana Drugs

The Āyurvedic texts describe a large number of *Rasāyana* drugs both herbs and minerals to be used singly or as compounds Many of such drugs are in use even today *Cyavanprāśa* and *Brāhma Rasāyana* are popular compound formulations while *Āmalakī, Pippalī,Śatāvarī, Amrtā, Śankhapuṣpī, Mandūkaparṇī, Madhuyaṣṭī, Brāhmī* and *Aśvagandhā* are popular single drug Rasāyanas. Certain *Rasāyana* drugs are used in specialised increasing dosage schedule with or without special noncereal dietary regimen popularly called *Kalpa** viz., *Pippalī-vardhamāna Rasāyana, Bhallātaka Rasāyana, Rtu-Harītakī* etc. The *Rasāyana* drugs besides promoting nutrition at the level of *Rasa*, *agni* and *Srotas* as described above also possess anabolising and virilising activities similar to *Vājīkarana* agents which are essentially aphrodisiac and mood-elevating agents besides their effect as *Rasāyana* or anabolisers.

Thus as also concluded elsewhere (Singh, 1978) the *Rasāyana* therapy of Āyurveda is a very comprehensive discipline based on an interesting philosophy and on sound scientific footings It introduces a hitherto new concept of nutrition and its relevance to the qualities of tissues, longevity, immunity and mental competence and ability

* Such Kalpas may be seen in *Kasyapo-Samhitā, Nāvanītaka*, Cadrata's *Yogaratnasamuccaya* and later in Sodhala's *gadanigraha* The culminated in composition of independent text on Kalpas (ed)

Vājīkaraṇa

Even ın remote past, one can fınd the ınstınctıve desire to extend clan or race *Putraısanā* (desıre for progeny) ıs one of the primary desıres of mankınd mentıoned in the *upanısads.*[10] Moreover, to make ıt more attractıve, clınged wıth ıt ıs the pleasure denved from sex. What ıs saıd ın *Rgveda* ın a refıned way[11] has been expressed ın quıte a vulgar one ın the *Atharvaveda* where man wıshes to make hıs phallus as large as that of ass, horse or donkey [12] The name '*vāja*' meanıng both speed and semen Thus thıs branch of Āyurveda desıgned to promote vırılıty as well as power was crystallısed, ın the post-Atharvan penod, by the name of '*Vājīkaraṇa*'[13] The bull (*vṛṣa*) ıs another anımal whıch dıscharges semen copıously and as such it ıs also known as '*vṛṣya*'[14]. By contrastıng the lıttle bırd sparrow and the gıant animal elephant ın terms of sexual power or sustenance ıt has been shown that ıt does not depend on the bulk of the body but more on wıll and energy Human nature, here, plays ımportant role, some are stimulated by tıme factor, some by practıce, some by other means (drug etc) while others are potent by nature [15]

In ancıent days, ıt was a routıne procedure to take some aphrodısiac before undertakıng sexual ıntercourse [16] The ıdea was to promote, ın thıs way, the quantı and qualıty of seman along wıth the sexual enjoyment

The dıfference between *Rasāyana* and *Vājīkarana* ıa that the former promotes all the *dhātus* whıle the latter specıfıcally ıncreases semen and sexual potency

Of the two aspects of *vājīkarana*-procreatıon and enjoyment - one or the other has been receıvıng emphasıs from tıme to tıme accordıng to socıologıcal condıtıon Manu emphasıses more on the former[17] whereasVātsyāyana attaches more ımportance to the latter. That ıs why he has ıncluded thıs topıc ın hıs text [18] But the physıcıan's role has been to look to both and maıntaın a balance between the two On one hand ımpotency ıs a dısease and, on the other, excess of sex causes loss of *dhātus* and orıgın of other consequences lıke consumptıon etc as happened to Moon by hıs excessıve ındulgence wıth Rohınī Sımılarly, excess of progeny ıs troublesome but at the same tıme ınferılıty ıs also a problem

In ancıent compendıa of Āyurveda, *Vājīkarana* ıs descrıbed ın a separate chapter after *Rasāyana* [19] In the *cıkıtsāsthāna* of *CS*, the fırst two chapters deal wıth *Rasāyana* and *Vājīkarana*. In fact, theır role ıs more preventıve and as such they are parts of *svasthavrtta* (health lıvıng) rather than of *cıkıtśa* (therapeutıcs)

Classification Of Vājīkaraṇa

The *Vājīkarana dravyas* are dıvıded ınto the followıng three groups

1 *Dehabalakara* (or janaka)-promotıng physıcal strength ıncludıng semen

2 *Manobalakara* (or pravartaka)-enhancıng mental power (sexual potency).

3 *Deha-manobalakara* (or janaka-pravartaka)[20] — Actıng ın both ways

Again it is grouped, in terms of semen, as follows

1 *Śukravrddhikara* -increasing semen

2 *Śukrasrutikara* -preempting discharge of semen

3 *Śukrasruti-Vṛddhikara* [21]-covering both the above aspects.

Vājīkarana Dravyas.

Among the *Vājīkarana dravyas, kapikacchū, māṣa, vidārī, śatāvarī, aśvagandhā, madhuyaṣṭī, uccaṭā*, eggs, semen of animals and birds, testicles of goat etc. are important ones [22] The use of cannabis which is prevalent now as aphrodisiac was not used as such in early times. As Suśruta says these drugs provide pleasure, progeny and stamina [23]

References

1 *Yajurveda* 36 24
2 *Atharvaveda* 4 12
3 *Bhagvadgītā* 2 22
4 Caraka *Caraka-samhitā* Ed Sharma, P V , *cikitsāsthāna*, ch 1, Chaukhamba Orientalia, Varansi 1985
5 Suśruta *Suśruta-samhitā* Ed Atrideo, Cikitsāsthāna, chs 27-29, Motilal Banarsidass, Varanasi 1960
6 Vāgbhata *Astāngahrdaya, Uttarasthāna*, ch 39, Chaukhamba Prakashan, Varanasi
7 Bhāvamiśra *Bhāvaprakāśa*, cikitsā 8 1-6
8 Sārngadhara *Sārngadharasamhitā, Pūrvakhanda*, Ch 4 13, Chaukhamba Prakashan, Varanasi 1980
9 Singh R H *Āyurvedīya nidāna cikitsā-siddhānta*, vol 1, Chaukhamba Amarabharati Prakashan, Varanasi, 1986
10 *Br Up* 3 5 1, 4 4 22
11 *RV* 10 85 37
12 *AVS* 6 72 3, 101 2 Also see '*śepaharsinī osadhi*' (phallus-stimulating herb), in *AVS* 4 4 1-8
13 *SS SU* 1 7 (8) along with Dalhana's comm
14 *CS Ci* 2 4 36
15 Ibid 6-7
16 Ibid 1 3, Vi 8 4, SS Ci 24 131
17 *Manusmrti*, 3 45
18 Kam 7 1 36-48, also *kāndarpikādhyāya* (ch 75) of *Brhatsamhitā*
19 In *SS* under the list of eight *angas* (SU ch 1) *Vājīkarana* follows *Rasāyana* but in the body of the text it is in the reverse otder (see Ci chs 26-27)
20 Dalhana on SS Ci 26 6-9
21 Cakra on CS Ci 2 451
22 See CS Ci 2, SS Ci 26, AH U 40
23 SS Ci 26 39 (*ete vājīkarā yogah prityapatyabalapradāh*)

10.7

AGADATANTRA AND BHŪTAVIDYĀ

BANWARI LAL GAUR

Agadatantra

The problem of poisons and their treatment has been coming since prehistoric times when primitive man roaming in forests often fell victim of the bites of poisonous animals. Sometimes, he also suffered from toxic symptoms when he took some unknown herb as diet or drug In such conditions, he must have thought and discovered some remedy to counteract the same.

In Vedic literature, there are a number of references about poison and its treatment [1] By the age of Upaniṣads, the science dealing with animal poisons and their treatment was developed and had taken concrete shape as '*Sarpa-vidyā*'[2] Later '*Agadatantra*' developed as one the eight branches of Āyurveda which dealt with diagnosis and treatment of all types of poisons- animal, vegetable, mineral and artifical [3]

The word '*gada*' is mentioned as one of the synonyms of '*Roga*'[4] (disease) Every synonym has got some specific significance, apart from general meaning, such as '*Āmaya*' denotes origin from 'āmadoṣa', 'Roga' exhibits the painful nature and so on[5] Likewise, '*gada*' denotes 'toxicity'[6] Thus '*Agada*' means that which counteracts toxicity e g effect of poisons though suprisingly, like '*gada*', it is not said as one of the synonyms of '*ausadha*' meaning generally 'remedy' It indicates that the use of '*agada*' has been in the restricted sense of 'anti-toxic' (*Prativisa* or *Visaghna*)[7] In *Rgveda*, the word '*agada*' has come several times[8]. It may be that initially this word was used generally for 'remedy' but later on was restricted in the sense of anti-poison In Āyurvedic texts, it is used in the latter sense and it is on this basis that the name of the speciality was coined as '*Agadatantra*

Agadas were used in many ways externally as well as internally[9] They were also worn on the body as *mani* (amulet) to avert poisonous effect[10] In this context, the word '*osadhi*' denotes '*agada*'[11] Food was touched with agada to detoxicate it [12]

Agadatantra, also known as *Visatantra*,[12a] was a well-developed speciality on which several treatises were written by eminent experts such as *Kāśyapa*, *Ālamdāyava*, *Uśanas*, *Sanaka* and *Lātyāyava* whose quotations are found in defferent texts and comms [13] Vāgbhata has quoted *Brhaspati* and *Gautama*[14], *Kautilya (Cānakya)*[15], *Śiva*[16] *Bhoja* and *Vaitarana*[17] At one place, views of



Jānguli, the Poison-destroying goddess
(From Indian Buddhism Iconograph by B T Bhattacharya)

Punarvasu, Nagnajit, Videhapati, Ālambayana and *Dhanvantari* are quoted[18] It shows that the Schools of Medicine and Surgery also had their own traditions in respect to toxicology Among all, ***Kāśyapa*** became symbolic as an expert in toxicology[19] like *Ātreya* and *Dhanvantari* in Medicine and Surgery In *Purānic* tradition, *Garuda*, because of its natural enmity against serpents, was taken as symbol of poison-destroying agent Hence this science was also called as *'Gārudī Vidyā'*[20] and *mantras* and remedial meaures as *'Gāruda'*[21] In Buddhist tradition, it was known as *'Jāngulī Vidyā'*[22] on the basis of the goddess Jāngulī and the experts in this branch were called Jāngulika [23]

Definition of Viṣa

'Visa' is so called as it produces *'Viṣāda'*[24] (specific depression) This it does by permeating quickly all over the body[25]. For these two characters two new terms *'Vikāsi'* and *'Vyavāyi'* were coined[26] The killing action is also included in the word *'Viṣa'* derived from the root *'Visa Viprayoga'* (to separate) as it sparates the *prānas* from the body (*Visnāti prānam iti visam*)[27]. Thus the word *'Visa'* encompasses in itself almost all the characters of poison

Origin of Viṣa

Ṛgveda (7.50 3)mentions poison derived from plant source while *Atharvaveda* (AVS. 4 6.8) adds to it the poison derived from mountains (the mineral source)

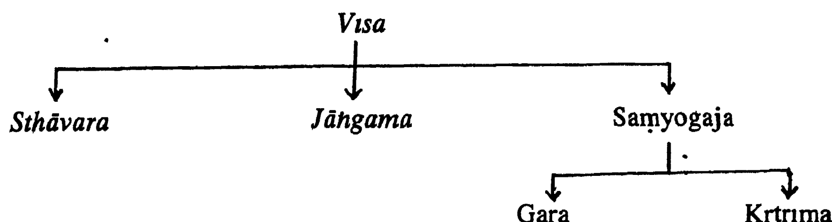
Mythological origin of poison from churning of ocean is described in Purānas[28] and also in Āyurvedic Samhitās[29] It is followed by the emergence of amrta (nectar) which indicates that poison may be effectively transformed into nectar if handled properly.

Classification of Poisons

Caraka has classified poisons into two groups - 1 *Sthāvara* (obtained from non-moving)and 2 *Jāngama* (obtained from Moving) which are also termed as ***'maula*** or *mūlavisa'* (derived from root of plants) and *'daṃstrāviṣa* (derived from fangs or stings e g. animals) respectively A third group known as *'gara'* is also mentioned. It is an artificial poison made by combination of substances which cause chornic disorders due to toxicity Again *'dūsīvisa'* has been described which is latent poison exacerbating after a certain period [30]

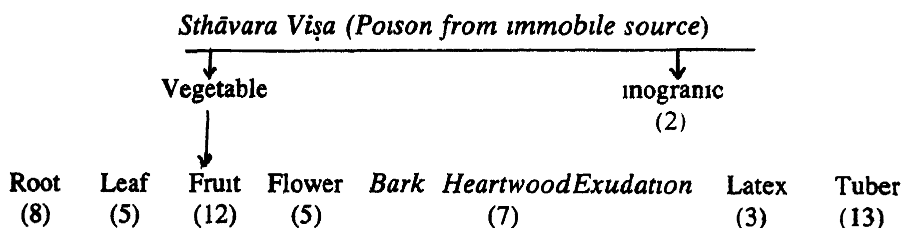
Cakrapānidatta in his comm (on *CS* Ci 23 14) has discussed this topic threadbare He says that Suśruta has mentioned three groups of poisons - *Sthāvara*, *Jāngama* and *Krtrima* *Dūsīvisa* is included in these three groups In fact, *'gara'* is of two types - one made of combination of non-poisonous (or mildly poisonous) substances while the other from that of poisonous ones The former is 'gara' and the latter is *Krtrima* Thus eventually there are four groups of poisons - *Sthāvara*,

Jāṅgama, *Gara* and *Kṛtrima* as said elsewhere by Caraka himself and supported by a relevant statement of *Vṛddha Kāśyapa*. This may be presented as follows —



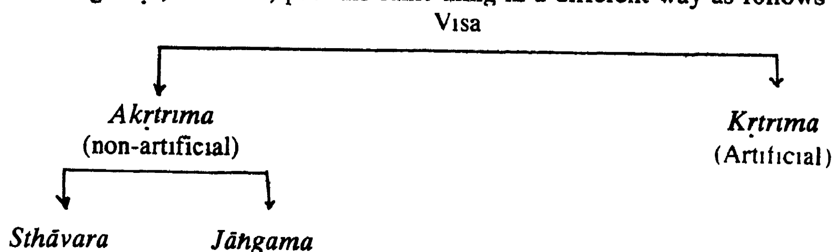
The same is repeated by *Vijayaraksita* [31]

Suśruta, as said earlier, classifies poisons primarily into two groups - *Sthāvara* and *Jāṅgama* but later adds one more '*Krtrima*' and thus the total number becomes three. The location (*āśraya*) of *Jāṅgama Visa* is of sixteen types while the *Sthāvara Viṣa* has ten locations of which nine are parts of plant (such as root, leaf etc) and remaining one is '*dhātu*' (metal and other inorganic substances) These ten are again subdivided by enumerating individual substances which became fifty five[32]. This may be presented as follows —



It is to be noted that Caraka does not include inorganic substances under *Sthāvara Visa* This is confirmed by the fact that another name for this is '*maula visa*' meaning 'root poison' which excludes metals and minerals It indicates that during Caraka's time, inorganic substances were not used as poison which were introduced later on and were recorded by Suśruta

Vāgbhaṭa, however, puts the same thing in a different way as follows[33] -



In AS (U. 40 7), in addition, locations of poison are described as in SS but surprisingly '*rakta*' is enumerated under *dhātu* which is, in fact, not *Sthāvara* but *Jāngama*

In those days, the main problem was snake-bite and other insect-bite and as such the *Jāngama* Visa covers more space in the ancient Samhitās of Āyurveda.

Effect of Poison

The efect of poison in the body has been minutely observed and studied by the ancients The symptoms produced right from ingestion have been demarcated into different phases termed as '*Vega*' (impulse). Suśruta has mentioned seven Vegas[34] according to the number of *kalās* traversed by the poison while Caraka accepts the eighth one also which causes death.[35] Carapāṇi has tried to synthesise both the views.[36] They had also made observation on these phases on birds and animals. The quadruped animals and birds die in the fourth and third Vega respectively.

The ten guṇas (propertis) in poison are the same as in *madya* (wine) except one where *madya* is mentioned as amla whereas the *Rasa* of *Visa* is not discernible (*anirdeśyarasa*). *Madya*, through its ten guṇas, effect the respective guṇas of *ojas* and thus produce narcosis [37] Poison also acts in the same way and by destroying ojas kills the patient but surprisingly Caraka has not described its action accordingly rather he says that patient dies due to excessive aggravation of *doṣas* and obstruction in channels.[38]

Treatment of Poisoning

Treatment of poisoning is sufficiently mentioned in the Vedas[39] Caraka and Vāgbhata have given systematic description of the methods of *Viṣa-cikitsā*, the most extensive description is available in the *Suśruta-saṃhitā* which can be divided in the following two heads -
(1) Precautionary measures
(2) Treatment

(1) Precautionary measures. The poison is so swift and deadly that a physician does not find any time to treat and the patient dies Therefore, precautionary measures are more important In Vedas and Ayurvedic Samhitās, more emphasis has been given to precautionary mesures than to treatment of poison because poisoning is a potent means of unnatural death [40] Therefore, protection of body from such harmful factors is very necessary if a man wants to live long and enjoy normal span of life

Different methods of protection against poisoning are described in scriptures -

1 *Testing of food* — For homicide, the easiest method was to mix poison in food Therefore, the food should be protected from poison and if it is mixed with poison to exmine it so that it can be avoided The three tests prescribed for the same are as follows :-

1 Physical observation of the effects on utensils etc
2. Fire test — A portion of food is put on fire and result is observed
3. Experiments — Food is given to birds and animals and result recorded

Alike, other things of personal use as toothpowder, massage oil, bathing water, cloths, bed etc should also be protected from poison [41]

2 *Rearing of antipoison birds* — Certain birds like peacock, **mongoose** etc kill poisonous anomals As such, their domestication removes, to a **certain extent**, the fear of animal poisoning [42]

3 *Anti-pollution measures* — The enemy may manage to pollute the atmosphere with poisonous gases and the water reservoirs with other toxic substances Hence a constant watch would be necessary to check it and purfify them from time to time. Suśruta's elaborate method to detoxicate the atmosphere by blowing musical instruments is unique [43]

4. *To avoid contact with other women* — Women have been a great source of danger to human life In Maurya-Gupta period, women in the form of *Visakanyā*[44] (poison-girl) were employed to kill a person Hence it was always safe to avoid **contact** with **unknown woman.**

(2) *treatment proper* — Caraka has presented the treatment of poisoning in a systematic manner which gives an insight into the methods adopted by the ancients It consists of twentyfour remedial measures[45] which can be placed as follows -

(a) To check entry and circulation in blood —
 1. *Aristā* (Binding)
 2. *Utkartana* (incision or excision)
 3. *Nispīdana* (Compression)
 4. *Cūsana* (Sucking)
 5 *Agni* (Cauterization)
 6. *Priseka* (Water sprinkling)
 7 *Avagāha* (bath)

(b) Eliminative therapy -
 8 *Vamana* (Emesis)
 9 *Virecana* (Purgation)
 10 *Nasya* (Snuffing)
 11 *Raktamoksana* (Blood-letting)

(c) Symptomatic or supportive therapy —
 12 *Hṛdayāvarana* (Cardiac protection)
 13 *Samjñāsthāpana* (Resuscitation)
 14 *Mrtasañjīvana* (Revivation)

(d) Counteracting measures -
  15. *Mantra* (Incantation)
  16. *Auṣadha* (Drugs)
  17. *Prativiṣa* (Specific antidote)

(e) Modes of application -
  18. *Lepa*(Pastes)
  19. *Pratisārana* (Local application)
  20 *Añjana* (Collyrium)
  21. *Pradhamana* (Blowing up through nostrils)
  22 *Dhūma* (Smoking)
  23 *Leha* (Linctus)
  24. *Upadhāna* (Topical injection)

Because of the dreadfulness and severity of poison, *Mantra* was relied upon more than drug therapy and that is why it is given the first place among the twentyfour remedial measures But as it is difficult to find such accomplished persons who could use mantras with potency and success, the second place is given to *ausadha* (*agada*)[46] The use of Prativisa ('*Prativisam Visāntara-prayogah* — Cakrapāni on CS Ci 23 36) is also prescribed in failure of *mantra* and *tantra*.[47] The logic behind the use of 'Prativisa' (another visa which could counteract the present visa) is that *Sthāvara visa* moves upwards whereas *Jāṅgama* moves downwards Thus in case of *Sthāvara visa Jāṅgama viṣa* is prescribed which neutralises it by counteracting the former's movement.[48]

One very significant contribution in treatment of poisoning is '*Upadhi*' or '*Upadhāna*' in which drug is put on some incised spot on the scalp (*Mūrdhni Kākapadam kṛtvā*) so that it comes in direct contact with blood and thus detoxicates it.[49]

In this context, dog-bite (Rabies) producing '*Jalasantrāsa*' (hydrophobia) is also described [50]

While dealing with toxicology, some conditions relating to Jurisprudence such as accidental injury, hanging (*Udbandha*) and drowning(*Jalamrta*) are also dealt with [51]

The superiority of Indian Medicine lies in the fact that it does not only consider the evil effects of poison and measures to counteract it but has also searched into its bright aspect and has transformed it into nectar by applying it as remedy in various disorders.[52]

Bhūtavidyā

Bhūtavidya is one of the eight branches of Āyurveda [53] It deals with invisible agents such as *Bhūta*, *Preta*, Raksas, *Piśāca* etc which invade the human being and cause various disorders

In the Ātharvaveda Bhūtas and a number of such names occur along with their treatment with magical charms [54] Though in course of development, Āyurveda took a rational form, still remained as a reminiscent of *Atharvanic* tradition It also retained the *Daivavyapāśraya cikitśa* which includes magical charms as remedy Thus though the ancient medicine in India transformed itself in Rational Medicine (*Yuktivyapāśraya cikitsā*), it could not get rid of primary beliefs and practices completely It had to maintain balance between *Yukti* and *Daiva*, tradition and science

The mental disorders are deemed to be caused by Bhūtas Caraka has recognised and described in detail one of the types of *Unmāda* (insanity) as *'āgantuja'* (exogenous) which is meant as caused by *Bhūta* [55] Suśruta deals it in a separate chapter (U 60) entitled as *'amānusopasarga'* (afflictions caused by non-human agent). These agents are termed as *'grahas'* [56] Suśruta has contradicted the view favouring origin of epilepsy from *Bhūtas* and established its causation by *doṣas*.[57] Further, denying origin of *unmāda* by *Bhūta*, he established it as a purely mental disorder [58] Vāgbhata, however, in continuation of *bālagraha*, describes two chapters dealing with *Bhūtavidyā* (*AH*, U 4-5) Thereafter, he describes *unmāda* (*Ch* 6) and *apasmāra* (Ch 7) Though in describing them he follows Suśruta and does not mention causation of *Bhūta* in any way, still by placing these diseases here, it is evident that *Bhūta* was lingering in Vāgbhata's mind. Arunadatta's plea that they are described after *Bhūtavidyā* because of similarity in their treatment[59] is not at all convincing

The other connotation of '*Bhūta*" in modern parlance, is micro-organisms which are too invisible and cause various disorders A modern scholar has explained all the Atharvavedic terms relating to Bhūtas in the sense of '*Krimis*' [60] '*durnāmā*' which affects uterus and consquently foetus[61] is nothing else but micro-organisms causing infection Similarly, the *Rakṣas* invading the wounds[62] are defintely micro-organisma Fumigation with mustard, neem leavers etc acts as disinfectant and repel these *Rakṣas* [63]

Thus *Bhūtavidyā* contains material which apparently may look as representing the orthodox tradition but has potentiality for scientific truths if seriously studied and worked out

REFERENCES AND NOTES

1. *RV* 1.191, *AVS* 4.6, 7; 5 13, 6.12, 100, 7 50, 10 4
2. Ch Up. 7 1 2
3. SS SU 1 7 (6) Caraka gives it the name '*Visagaravairodhikapraśamana*' (which deals with elimination of natural, artificial and biological poisons)
4. *CS Ni* 1.5
5. Cakrapānidatta on CS Ni 1 5 Curiously he did not explain the word '*gada*'
6. The meaning of this word given by Arunadatta in his Comm on AH. Ni 1 1 is not at all clear (*gada iva gado 'nekakāraṇajanyatvāt Yathā hi gado' nekakārana jātastathā gado' piti gadaśabdasyārthah*)

7. In *CS*. agada is not mentioned in the list of twentyfour remedies for poison though '*Prativiṣa*' is there (*CS* Ci. 23,35-36) and specific formulations are termed as '*agada*' like *mrtasañjīvana agada*, *Mahāgandhahastī agada* etc.
8 *RV*. 4 17.8, 10 16, 6, 97 2, *AVS* 18.3.55 with Sāyana's Comm.
9 *CS*. Ci 23.53, 58, 67, 74-76, 85-86.
10. *AS SU*. 8.107-112
11 Ibid 8 8; Also '*mantrauṣadhiruddhavīryaḥ*' (Raghu. 2.32)
12 *SS*. *SU*. 46 448 (*Visaghnairagadaiḥ spṛṣṭam*)
12.a AS. U 47 36, Arunadatta on AH U 35 int
13 Sen G N, *Pratyaksaśārira*, Int pp. 35-37 Kāśyapa is also quoted in AS U. 40 108, 43 41, 46 There is also *Vrddha* Kāśyapa (See CK on CS. Ci. 23.14).
14 *AS*. *SU* 8.102, 125.
15. Ibid. U. 40 59, 63.
16 Ibid. U. 40 67
17 Ibid. U. 42 39
18 Ibid. U 40.26-31
19 See dialogue between *Kāśyapa* and *Takṣaka*, the Serpent-King, in MBH (Ādi. 42 33-41, 43 1 19, 50 17-27) A similar dialogue is found between *Dhanvantari* and *Manasā*, the Nāga goddess, in *Brahmavaivartta Purāna* (3 51).
20 *Garuda-Purāna* I ch 19, 20, 22, 146-204, *Agni-Purāna* ch. 294-98.; *Bhavisya- Purāna* I ch. 29-38 91.
See also *AVS* (4 6.3) where *garutmān* (*garuḍa*) is mentioned as destroyer of poison
21 AS U 42 40 (*Gāruda añjana*)
22 Bhattacharya B T *Sādhanamālā*, Vol I, pp 245-47 (*Ya imām Vidyām bhiksavo dhārayisyati sa yāvajjīvam ahinā na daśyate, na vā'sya kāye visaṃ sankrāmati*)
23 Amara I 9 11 ('*Visavaidyo Jāngulikah*' .,'*dve gāruḍikasya*')
24 SS Ka 3 21 (*Visādajananatvācca Visamityabhidhīyate*).
25 Bhanuji Diksita on Amara I 9 9 ('*Visḷ Vyāptau*' — *Vevesti kāyam iti Visam*) *Vyapaiya sakalaṃ deham*' (AS.U 40 23)
26 SS Ka 2 19-23
27 Diksita Bhattoji *Siddhāntakaumudī*, *Tihanta*, *kryādi*.
28 Visnu I 9 97, Bhāgavata 8 7 18
29 CS Ci 23 4-5, AH U 35 1-3
30 CS. Ci 23 6-17, 31
31 Madhukosa (MN 69 33-34)
32 SS. Ka 2 3-5, 24
33 AH U 35 5-6
34 SS.Ka 2 34-39
35 CS Ci 23 18-23
36 Cakrapāni's Comm on the above (*iti Susrutena samamavirodhah*)
37 CS Ci 24 29-30
38 CS Ci 23 31-32
39 In AVS 10 4 25 '*hrdayam parivarjya*' is quite significant which has come down to CS as '*hrdayāvarana*' or '*hrdayaraksā*' one of the twentyfour remedies of

poisoning, the knowledge had come down through a long tradition and would continue further (*AVS* 6 12 2) As usual Indra is again seen here as mediator between gods and men (AVS. 10 4 1, 10, 16-18)

40. CS. Vi. 3.38.
41. Ibid. Ci. 23, 110-121, *SS.Ka.* 1; *AS. SU* 8.10-52, *AH. SU.* 7.4-26.
42. SS. Ka. 1.33.
43 Ibid. Ka. 6 (Chapter on blowing of kettle-drum), also 3 6-17.
44. SS Ka. 1.6
45. CS Ci 23.35-37
46. SS Ka. 5.9-13 SS, at one place, gives first position to '*Osadhi*' (*evamoṣadhibhir mantraih kriyayogaiśca yatnataḥ*) Also *AS*, U. 40.111.
47 AS U 48 2 (*Vise prativisam yojyam mantratantrairasidhyati*)
48. AS U 48.4-5. *Vijayarakṣita* mentions *Jāṅgama viṣa as 'ūrdhvaga'* (moving upwarda) and *Sthāvara visa a 'adhoga'* (moving downwards). He also quotes Caraka who says that it is due to prabhāva that *visa destroys visa (Madhukoṣa* on MN. 1 9)
49. CS Ci. 23.66-67; SS. Ka 3.43; AH U 36.77-78
50. SS. Ka. 7 43-61 (It is also called as '*ālarka viṣa*')
AS U. 7-12, 52-65, AH. U. 38 8-15, 34-39.
51. SS Ka. 5 55, CS. Ci. 23-53.
52 See ch on uses of poison (*Visopayoga*) in AS (U 48) also RRS 29 21
53 Bhū Tavidyā is enumerated in the list of the disciplines of knowledge in *Chāndogya Upanisad* (7 1 2) Milindapanha (1 1 19) mentions '*bhūtavaidya*' (expert in *bhūtavidyā*)
54. AVS 1.28 etc
55 CS Ni. 7 3, 10-16
56 SS. U. 60.7, 27 (*grahasanjñāni bhūtāni*)
57 Ibid, U 61 17-21 ('*Tasmād* —— *apasmāro dosajo na tu bhūtāveśajah iti siddhāntah*' -Dalhana)
58 SS. U 62 3 (*Mānaso 'yamato vyādhirunmāda iti kīrtitah*)
59 *Bhūtapratisedhādanantaramunmādāpasmārapratisedha ucyate, cikitsāsāmānyāt* — Arunadatta Int AH U 60
60 Shastri Ram Gopal Vedon mem Āyurveda, pp 48-88
61 *AVS* 10 162 2
62 *SS SU* 19 23
63 '*Sarsapādiraksoghnanihataujāmsi raksāmsi naiva punarvraninamupasarpanti*' — Dalhana on *SS SU* 1'

11 NON-CONVENTIONAL DIVISIONS

11 1

BASIC CONCEPTS OF ĀYURVEDA

V.J. THAKAR

Sensations of pain and pleasure are the inherent properties of all living organisms This fact confirms the existence of the knower (Self), the known i.e. objects of knowledge, sensations produced within the knower as a result of his contact with the objecs; which all are inter-dependent and eternal[1]

Yearnings for permanent happiness and strivings for lasting freedom from pain or at least to avoid and alleviate the suffering are also eternal, being instinctive and inherently existent in all living beings.[2]

This,in short, is the subject-matter of Āyurveda which confers on it eternity (anādi, nitya, sāsvata) and universality (concerning to all creatures of all times (sarva-bhūta-hita)[3] The eternity of Āyurveda is established by Caraka with valid reasons.[4]

'Āyurveda' is a word typical of ancient Indian culture It denotes comprehensive and profound knowledge of ĀYUS and which no other word probably in any other language can express.

'Āyurveda' is a compound word,derived by combination of two words 'Āyus' and 'Veda'. The word 'Āyus. is derived from the root 'in' meaning progressive movement and the word 'Veda' is derived from the root 'Vid' meaning to know, to be, to think and to attain Out of these four meanings, the meaning 'to know' enjoys a priority from tradition, while other meanings also have relevance [5] The word 'Āyurveda' is not found in Vedas, though the word 'Āyus' is frequently mentioned along with its adjectives like hita, *dīrgha* etc ,so also mention of physician (bhisak), therapy (bhaisajya), praise of medicinal herbs and their classification (osadhisūkta), diseases (vyādhi) and effects of *Rasāyana* and qualities of good health-*bala, varcas, ojas, saha etc.* are found in Vedas.

In *Rāmāyana* and *Mahābhārata* and also in *Purānas* the word 'Āyurveda' and god Dhanvantari as personified Āyurveda have been mentioned.

So we can easily surmise that Āyurveda might have fully developed as a special branch of knowledge during the interval between Vedic period and advent of purānic period. Definition of Āyurveda is explicitly given in *Caraka-samhitā* It says that Āyurveda is the Veda of Āyus,or the source from which the knowledge of Āyus is

derived, is called Āyurveda'. The contents of Āyurveda, in nut-shell, are-the description of the causes, the manifestations and the therapeutics of both the healthy and the unhealthy states of person. It is called Āyurveda because it is the repository of the knowledge of all aspects of *Āyus* i.e.healthy and unhealthy states of body, mind and senses. It is also called by other words which are mentioned as its synonyms — *'Āyuḥ-śākhā'*-a branch of knowledge which deals with *Āyus*, 'Āyuḥ-sūtra'- the sequential dealing of the subjects related to *Āyus*, 'Āyus-tantra'-a serial discourse or exhaustive exposition of the subject concerning *Āyus; Āyuh-śastra, Āyur-vidyā* and *Ayur-jñāna* and *Ayur-lakṣaṇa* — authortative and systematic knowledge of *Āyus* Further dilating on the subject-matter of Āyurveda Caraka explains that "wherein the nature and characteristics of *Āyus*, the four types of Āyus, viz:*Hita*, *Ahita*, Sukha and Duḥkha, materials and practices which are wholesome or detrimental to *Āyus* and span and nature of *Ayus* are described is called Āyurveda [6] Āyurveda is comprised of eight divisions viz. (1) *Kāyacikitsā* (2) *Śalya* (3) Śālākya, (4) *Bhūta-vidyā* (5) *Agada-tantra (6) Kaumārabhrtya* (7) *Rasāyana* (6) *Vājīkarana*. Its subject may again be classified under ten headings viz (1) *Sarīra* (body) (2) *Vrtti* (Nutrition) (3) *Hetu* (Causative factors) (4) *Vyādhi* (Disease) (5) Karma (Treatment) (6)*Kārya* (Health) (7) *Kāla* (Time) (8) *Kartā* (Doer-bhisak) (9) *Karana (Means of Treatment-bhesaja) and (10) Vidhi* (Mode of administration) [7]

It points out to the Man not only the ways and means to lead a meaningful life in this world but also for the same in the other world.[8]

Susruta puts the subject matter of Āyurveda briefly under five headings (1)*Purusa* (Person), (2) *Vyādhi* (Disease) (3) *Auṣadha*(Means of treatment) (4) *Krīya* (treatment), (5) *Kāla* (Time).[9]

According to *Caraka*, *Cetana* and *Purusa* are synonyms because it is a living mass[10] *Purusa* is called *Adhyātma-loka* (world inside) while Loka, *Jagat* and *Viśva* are the words used to denote the world outside. Internal environment and external environment, millieu-interni and millieu-externi, microcosm and macrocosm are the words denoting the same meanings respectively [11] The *Purusa* i e Man is the Master and the substances in the external world are but his means[12]

Along with the understanding of different aspects of *Āyus* or *Purusa*, understanding of the Loka, surrounding word, also therefore becomes imperative because the causative factor and the means of treatment, nutrition, the means of enjoyment, the time factor, the physician and attendants and the drugs are all parts of the external world Understanding of Loka is most vital as communication and mutual inter-play constantly go on between Man and his surroundings It is their harmony *(sāmya, sampat, Prakṛti)* and disharmony *(Vaisamya, vipat, vikrti)* which is responsible for the ease and the disease of the individual [13]

In the above account, we have seen that'*Āyus*' occupies the central place and all other matters are arranged or revolving round it Unless *Āyus* is explained, other topics would not be clear

Definitions of Āyus

(1) Āyus is the outcome of the combination of a few components (*samyogapurusa*, Rāśipurusa) According to different view-points, the factors combining together are-

- two :body and soul
- three : body, soul,mind and senses.
-six : Five proto-elements (***mahābhūta)*** and spirit
-Twenty-four .Mind, Ten *Indriyas*, Five proto-elements and eight factors of Prakrti.
-Twenty five Twentyfour products of ***prakṛti*** (inclusive) plus ***puruṣa*** of which the former are insentient and the latter is conscious[14].
(2) It is again defined as incessant flow of *Cetanā*(consciousness) in a particular frame for a specified period of time Birth, growth, decline, death, respiration, thinking,winking, and feeling etc., are its manifestations[15].
(3) It is denoted by specific characters expressed in its synonyms viz. *Jīvitam* (living), *Dhāri* (sustaining, preventing or the opposing necrosis-tissue death), *Nityaga* i e always in flux, incessantly moving further, running out or dynamic i e constantly changing. This meaning is expressed in the root in of *Āyus*, *Anubandha*-Inspite of changing constantly a continuous link of consciousness is preserved between previous and subsequent.[16]

Four Types Of Ayus

Sukha-Āyus and Duhkha-*Āyus* arre two states of life opposite to each other experienced by the individual. ***Sukha-Ayus*** is the state of well-being i e health and happiness (complete ease) as defined by both *Ācāryas*. It is outcome of equi-balance of ***dosas, Agni, dhātu*** (body-tissues) and mala (effete products) with their normal functions *Duhkha-Āyus* is the opposite - disturbed-state of *dosas*, *dhātus* and *malas* leading to imbalance of functions and resulting in derangement of health, painful condition or disease

Hita-Āyus and *Ahita-Āyus* are two qualities of life opposite to each other, judged on the conduct and dealing of the individual from social point of view

The former type of *Āyus* is the mode of life (conduct, vocations and tendencies) based on qualities which are wholesome to other beings, such as charity, compassion, austerity, penance, peace, respect, restraint, zest for knowledge, quest for spiritual wisdom, detachment etc while the latter is just the opposite of the same[17].

Siddhānta (Doctrine)

It is defined as a Law or Doctrine accepted as an established fact after it has been examined by experts in all its aspects experimentally, and scrutinised logically and critically. They have been devided into four types as under

1. *Sarva-tantra siddhānta* · The doctrine upheld by all the branches of science or systems of philosophy.

2. *Prati-tantra siddhānta* : The doctrine accepted in a particular school of thought

3. *Adhikaraṇa siddhānta* . The doctrine accepted as valid during discussion of a particular topic.

4. *Abhyupagama siddhānta* Principle proposed and supported with due arguments by a party only for the sake of discussion[18]

The basic concepts of Āyurveda fall under the first three types

Theory of Causation

Every substance in the world is *Kāryadravya* i e effect or a product. Every effect or product has constituents as its causes, union of which produces the effect Out of the three sections of Āyurveda, the first section relates to the causes (hetu) and the other two sections (liṅga and auṣudha) are related to the effects *Āyus* itself and even the whole universe are products and their constituents viz five basic elements being their causes. Similarly, two states of *Āyus* 'ease' and 'disease' are also dependent on their respective causes Knowledge of six Categories (*Sāmānyadi sat Padārthjas*) is the cause and eradication of disease and preservation of balance in the body elements and health are its effect[19]

Effects are similar to causes which take part as their constituents As *trigunas* in *prakṛti* are the root cause of all creation all the substances in the world inherit more or less degree of *trigunas*. Similarly, *Pañcabhūtas* and Agni-*Soma* are the causes of all substances, so they can not escape the relative dominance or otherwise of the *Pañcabhūtas* and *Agni-Soma* On the basis of this principle, Āyurveda has classified mānasa *Prakṛtis* on relative dominance of *Sattva*, *Rajas* and *Tamas*, *dehaprakṛti* on that of *doṣas* and tissues of the body; and substances in the external environment according to relative predominance of five bhūtas The subject of nutrition and pathogenesis have bearing on this principle of similarity of cause and effect The same is also applied in the sphere of treatment The drugs are classified in two groups *śīta vīrya* and *usnavīrya* according to predominance of *Soma* and *Agni* following the principle of similarity of the cause to the effect [20] Theory of causation is important to Āyurverda in the sense that origin of diseases and their treatment with drugs etc is based on that In *yuktivyapāśraya*, yukti is rationable based on theory of causation

Theory of Creation

Different views about creation of man and universe are advanced·-

(a) Successive outcome of grosser elements from universal consciousness, evolution starting from *Ākāśā* and *ending at Pṛthivī* — these are basic elements that produce by mutual combination the man and innumerable substances in the universe. Their combination in different proportions is the cause for variations of infinite [21]

(b) Successive outcome of twenty-four elements from *avyakta* or*Prakṛti* which is inert and in which exist Triguṇas of opposite qualities in equipose and *Nirguna Purusa* who is conscious but not active The *Prakrti* after being agitated due to influence and contact of *Purusa* gets disturbed in its balance of three *guṇas*, starts to evolve and procreate rest of the elements in succession This concept of twenty-five elements is advanced by *Śvetāśvatara upanisad* and developed by *Sāṅkhya* Philosophy and adopted by Suśruta with slight modification Caraka instead of advocating *Prakṛti* and *Purusa* as two separate elements has proposed the concept of *Triguna Purusa* as a starting point in the genesis The whole creation animate and inanimate including human beings are the products of these basic elements [22]

(c) Six elements existing independendently combine together to create the universe as well as the Man. They are five inert elements viz *Ākāsā*, *Vāyu*, *Agni*, *Ap* and *Prthivī* plus the sixth conscious element Ātman In animate group the Atman becomes manifest, while in inanimate group it remains unmanifest. The reason for this difference according to Caraka is that the Indriyas (senses) are the medium through which consciousness manifests Inanimates are devoid of senses while animates possess them[23]

(d) Suśruta has mentioned another pair of components viz *Agni* and Soma dominantly taking part in the creation of both *Puruṣa* and Loka. This principle is just the reflection of the principle of paired (*mithuna*) governing factors of the whole universe viz *Rayi* and *Prāna*(*Aditvo vai prānah, Rayireva Candramāh*) advanced in *praśnopanisad*[24]

(e) Caraka has further clarified that the nine substances or elements namely five *Bhūtas* mentioned above and *Ātman*, *Manas*, *Dik* and *Kāla*- are *Kārana-Drvyas* (basic constituent) of which all other gross substances in the world-animate or inanimate - are effects or products[25]

(f) Not only the nine substances are casusative factors but six categories (*Sāmānyadi sat Padārthas*, viz *Sāmānya*, *Viśesa*, *Guṇa*, *Drava Karma* and *Samavāya*) are also the causative factors playing important role in all the gross products in the world[26]

The concepts mentioned in (e) and (f) above are forwarded by *Nyāyavaiśesika* School and are also favoured by the *Ācāryas* of Āyurveda

(g) Suśruta has added a few more subsidiary causative factors-viz *Svabhāva*, *Īsvara*,, *Kāla*,*Yadrcchā*, *Niyati* and *Parinūāma* These are also echoing the simihar theme put forward in *Śvetāsvatara upanisad*[27]

(h) *Purusa* has been described by Caraka not only philosophically but also in a practical manner. he has defined *purusa* as having three or four main components viz *Śarīra*(body), Sattva (mind) and *Ātman* (soul), or *Śarīra*, *Indriya*, *Sattva*

and *Ātman* ' out of these *Sarīra* (which includes Indriyas) and *Sattva* are having subdivisions according to the different enumeration of the constituents starting from *Ṣadanga* (six main divisions of the body) and ending upto the minutest particles of atoms Mind is divided in three basic qualities and innumerable variations resulting from their combination and permutations, while*Ātman*-the spirit-has no division and is one for the whole universe Out of these components, *Śārīra* including *Indriyas* and the Sattva are prone to sufferings and enjoyments, while *Ātman* is devoid of these dual effects He remains neutral, unperturbed not taking active part, but only a witness in the wordly affairs It is only His presence and touch that transforms inhert body and mind into conscious and dynamic automation[28]

Other allied Concepts

Concept of birth and death. Birth is the conjunction of different factors and death is disjuncition of these ones Death is just the antonym of *Āyus*. It is the disintegration or separation of the components which joined together at the time of creation or conception to form the *Āyus* [29]

Concept of individual *Ātman* and universal *Ātman* being one and eternal while other components being perishable, momentary and inhert *Ātman* is the Conscious factor, Omnipotent, and Omniscient[30]

Concept of *Sūksma śarīra* and *Ātman* leaving the body at the time of death and entering into a new body at the time of fertilization of the ovum. It is the influence of *Rajas* and *Tamas* which compel *Ātman* to rotate in this cycle of births and deaths because they cover and cloud or block His knowledge and bind Him in injoyments and sufferings as a result of His strong attachment to the wordly ojects[31]

Concept of three *Esaṇās* (drives--urges) viz *Prāṇaisanā*, *Dhanaisanā* and *Paralokaiṣana* or four objectives to be attained (*Caturvidha Purusārtha*) viz *Dharma*, *Artha*, *Kāma* and *Mokṣa*) as means to achieve the goals of relief from pain and attainment of bliss [32]

Concept of *Yoga* and *Moksa* as the two ultimate paths leading to absolute peace and happiness and complete freedom from pain, while other therapies and materialistic measures render only temporary relief and momentary pleasure[33]

Theory of Pancabhūta

Pancabhūtas are called *khādīni* i e beginning with *kha* i e *Ākāśa* and ending at *Prthivī* the fifth element Almost all *darśanas* are unanimous on the exisxtence of *Pañcabhūtas* as basic factors of creation Some consider them as eternal elements while others consider them as evolutes and perishable This order beginning with *Ākāśa* and ending at *Pṛthivī* is according to the process of evolution as described in *Taittirīya upaniṣad* It has the advantage of explaining the increasing number of

attributes in the successive *bhūtas*, *Ākāsā* having only one attribute *śabda* while *Pṛthivī* having five attributes *śabda*, *sparṣā*, *rūpa*, *rasa* and *gandha* Because each evolute has its own specific attribute and also other common attributes being transmitted from the mother or previous causative element, successive elements have attributes in increasing order *Ākāsā* the first element has only one attribute *śabda*, *Vāyu* the second element has two attributes-*śabda*, and *sparśa*, *Tejas* or *Agni*, the third element, has three attributes *śabda*, *sparśa* and *rūpa*, *Ap* or *Jala*, the fourth element has four attributes-*śabda*, *sparśa*, and *rasa*, *prthvi*, the fifth element, has five attributes, already mentioned above *Sānkhya* and Caraka follow this concept As the attributes increase in successive elements this process is termed as *Uttarottara- anupraveśa* or *Bhūtānupraveśa* which explains this phenomenon of increasing attributes[34] This School considers all the five elements or *bhūtas* as evolutes (products or *vikāra*) and hence not being stable or eternal Only *Avyakta* and *Purusa* are eternal in their views The basic three *gunas Sattva*, *Rajas* and *Tamas* of *Avyakta* are transmitted to all the remaining evolutes[35]

The *bhūtas* are defined as those having specific atributes which can be identified by one of the outer *Indriyas*' i e , five senses. *Vaisēsika* School believes *bhūtas* to be independent basic elements of the universe and not as evolutes from other elements. They believe that the basic elements are eternal and the substances which are eternal should possess either of two dimensions viz *Paramānu* (atomic) dimension or *Vibhu* (all-pervading) dimension One is the minutest and the other is the largest *Ākāsā* has the *Vibhu* dimension, while other four have the *paramānu* dimension Evolution from these basic elements are called products or *kārya-drayas* and are therefore not stable but perishable because they are produced by the combination of atoms of the basic elements and are liable to disintegration Their conjuction and disjunction are under the control of the will of God (Īśvara) while Caraka holds that they are caused by the activity of *Vāyu* which is predominant in *Rajas* and guided by the destiny of the individual and by inherent nature of atoms in additions to the will of God The atoms being eternal are always on move-oscillating or shaking[36]

All gross products of the world are nothing but the products of the aggregation of the atoms of the five basic elements in different proportions and as such are called *Pānabhautika* i e composed of *Panca-bhūtas* It is the predominance of one or the other bhūtas according to which the substance is labelled as *pārthiva*, *āpya* and so on This coexistence of all the five *bhūtas* in a product or a substance is called *Anyonyā nupraveśa or Pañcīkarana*' process[37]

Because we have only five senses to perceive the outer world, the number of basic elements and classification of their products into the heads of respective *bhutas* can not exceed five As the qualities of the *Pañcabhūtas* are ascertained by respective five senses, the question of relation between *Indriyas* and *bhūtas* becomes of vital importance One School believes that both Indriyas and *bhūta-gunas* have common origin i e from one and the same *bhūta* or element (*Tulyayonitva*) that is why *Indriyas* are capable of identifying and receiving that partcular quality The other School is of the opinion that bhūtas are inert, being the product of *tāmasa Ahankāra*

while *Indriyas* are capable of enlightening because they are the evolutes of *Sattvika Ahankāra*. *Sattva* and Tamas are of quite opposite nature yet because of natural force or tendency the *Indriyas* grasp one of the specific qualities of *bhūtas* Caraka specifically mentions *Svabhāva* (natural tendency) and *Vibhutva* (natural capability) and also commonness of elements as the cause of both the Indriyas and its objects which endows them with this sensitivity[38].

In addition to the above mentioned five specific qualities, there are other attributes or properties being characteristics of the five *bhūtas*. The twenty *guṇas*- in 10 pairs of opposite *guṇas* such as *guru-laghu* etc., are also distributed in different proportions in five *Mahābhūtas. They are called Sāmānya gunas* because they are generally present in more than one *bhūtas* as *śita* in *Vāyu* and *Ap*, *laghu* in *Ākāsā* and *Vāyu*, *guru* in *Pṛthivī* and so forth[39].

Āyurveda does not consider the gunas mere physical properties but as active pharmacological properties too[40].

These are general concepts basic to Āyurveda commonly shared by other systems of philosophy as well In Āyurveda, they are referred as *Sarvatantra-siddhānta* i.e. concept making common ground for all Schools of thought. Āyurveda has utilised them in applied form, having their relevance to every day experience and practices in health and disease; while other systems of philosophy have discussed them only in the context of the evolution of creation and arrainment of salvation

There are other concepts which are specific and which have been the original contribution of Ayurveda. They are as follows·

Theory of Tridoṣa

The three *doṣas* are *Vāta*, *Pitta* and *Kapha*. They are considered as the three pillars on which the edifice of life stands. They are constantly present in the body throughout life from fertilization to death They are responsible for all the activities during health and all disturbances during disease They are also responsible for death. They are products of *triguṇa* and *Pañcamahābhūta*[41]

So they bear the properties of these *gunas* and *bhūtas* which come under twenty general *guṇas* referred above. Though they are gross products (*kārya-dravyas*) of quite distinct and opposite attributes, they are, in normal condition, intimately mixed in the *bhūtas* of the body.

In gross form *doṣas* are described as *kitta* or *malas* and are eliminated in the form of flatus, bile and mucus (or phlegn) respectively. In the subtle form they are called *Prasāda-dhātus* and pervade throughout the body and perform specific functions-movements of all types viz respiratory, circulatory, nerve-impulse and muscle-contraction etc ; conversion or digestion, metabolism, thermogenesis, lustre and complexion etc., and resistance immunity, stamina, vigour and vitality, reproductivity and repair etc , are the functions of Vātta,Pitta and Kapha respectively[42]

In pathological condition, *Vātta*, *Pitta* and *Kapha* affect the body by excess of their specific activities and produce characteristic symptoms-pain, inflammation and suppuration (viscid sticky discharge) respectively. Loss of function or convulsive movements; rise of temperature, burning sensations and flushes; and loss of appetite, languidity and inertia etc. are also respectively indicative of aggravated *Vāta*, *Pitta* and *Kapha*[43]

Thus, they are called *dhātus* when they are within their physiological limits; *doṣas* when they produce pathological changes in the tissues and malas when they pollute or defile the tissues and are rejected out as excretions.

It is conceived that their existence in the body is, as a rule, at all stages of development and degeneration, which is manifest by their characteristic signs and specific functions. They exist in the sperm and the egg-cell and control foetal development from initial stage to full term stage They govern all phases of growth, maintenance and decay. They are the factors responsible for the typical constitution and temperament endowed to the person and also responsible for malformations and developmental abnormalities They function in harmony and mutual co-operation during health and are disturbed by unwholesome diet or conduct used by the person. Thus the concept of homeostasis (*dhātu-Sāmya*) and disequilibrium (*dhātu-vaiṣamya*) occupies the pivotal position in Āyurveda[44].

As the moon, the sun and air sustain the universe by their functions of growth, assimilation and motion. In the same way, *Vāta*, *Pitta* and *Kapha* sustain the body[45]

Through doṣas are pervasive in nature, they are dominantly located in particular regions of the body, such as *Kapha* above cardiac region, pitta between cardiac and umbilical region and *Vāta* below qumbilicus[46].

Each of the three doṣas is divided into five types having particular functions. The five divisions of *Vāta* are known even from the Vedas[47] They are *prāna*, *udāna*, *samāna*, *apāna* and *vyāna* which are also called as '*Pañca prāna*' because of their vital importance in relation to respiration and other functions Likewise, *Suśruta* named the five types of Agni (*Pitta*) as *pācaka*, *rañjaka*, *bhrājaka*, *sādhaka* and *ālocaka*[48]. Vāgbhata, later on, similarly named the five types of *Kapha* as *bodhaka*, *kledaka*, *avalambaka*, *ślesaka* and *tarpaka*[49]

The three *doṣas* work under impact of the environmental factors and consequently undergo fluctuations according to change in time (diurnal, noctural and seasonal), age and with relation to food[50] For instance, *Kapha*, *Pitta* and *Vāta* predominate relatively in three divisions of day (morning, noon and evening) Similar fluctuations may be observed in three divisions of night This is more marked and long-standing due to seasonal changes. For instance, *Vāta* is accumulated ,aggravated and normalised in summer, rainy season and autumn respectively The following Table would clarify it

	Sañcaya (Accumulation)	*Prakopa (Aggravation)*	*Praśama (Normalisation)*
Vāta	Summer	Rainy season	Autumn
Pitta	Rainy season	Autumn	Early winter
Kapha	Early winter	Spring	Summer [51]

The theory of *Tridoṣa* forms the basis on which Āyurveda stands and all the biological functions explained, because of their basic role in sustaining life and controlling its activities, *Vāta*, *Pitta* and *Kapha* are mentioned as components of *Prāna* Tridoss begin and end with life They are evolved from the *Pañcabhūta* to take up the functions of life They do not exist in life-less things

Concepts Regarding Digestion and Metabolism

Agni is the factor on which digestion and metabolism depend[52] It converts the ingested substances into assimilable products and further transforms them into body-tissues Different specific srotas (channels) are also there which carry and transport the materials during the process[53] The *pācaka Agni* which is located in *Jaṭhara*(abdomen) particularly in the place between āmāśaya and *pakvāśaya* known as *grahaṇī* is mainly responsible for digestion, over and obove, it also supports other specific forms of Agni such as five *bhūtāgnis* and seven *dhātvagnis* By the action of Agni, the resultant product is divided into two-*prasāda* (essence) and mala or *kitta*[54] (refuse) The former is assimilated in and received by the body and transformed into different tissues while the latter one is ejected out of the body

There are seven *dhātus* in the body such as *rasa* (chyle), *rakta* (blood), *māmsa* (muscle), *medas* (fat), *asthi* (bone), *majja(marrow)* and *śukra* (semen) They are constantly maintained and replenished by the process of metabolism As side products some *upadhātus* are also formed At every stage some mala is formed and excreted Of these prominent ones are faeces, urine and sweat[55]

The process of digestion and metabolism is controlled and regulated by *dosas* Thus *doṣa*, *dhātu* and *mala* are mentioned as ground materials of the body Suśruta's definition (*dosa-dhātu-malamūlam hi śarīam*)[56] is based on this concept and can be said as the physiological definition of the body

As the essence of all *dhātus* '*Ojas*' is formed[57] which, though pervades the entire body, is seated particularly in heart and is the support of life If ojas is lost, life vanishes[58] ojas is classified neither in *dhātus* nor in *upadhātus* but enjoys a special status[59] It provides strength, courage and immunity to the body and that is why it is also termed as'*bala*'[60]

Concept of Prakṛti (Human Constitution)

Every individual has got his particular constitution which determines his biological functions and responses This is termed as '*Prakrti*' which is determined by

preponderance of *dosa* at the time of fertilization[61] It plays an important role in pathogenesis and in treatment also the physician has to take into account the prakrti of the patient before he preceeds *prakrti-parīksa* is one of the important items under the examination of patient[62]

Prakrti has been studied in detail and is classified according to *doṣas*, mental qualities and even *pañcabhūtas*[63]

Concept of Health and Disease

Sāmya (equilibrium) is *svāsthya* (health) and *vaisamya* (disequilibrium) is *roga* (disease)[64] Here Caraka has used '*Prakrti*' and '*Vikāra*' for them respectively. Evidently this terminology is influenced by the Saṅkhya philosophy *Prakṛti*, according to Sankhya, is the state of equilibrium and so is health. Similarly *vikāra* (products) comes forth due to disequilibrium and so are diseases The creation (*vikāra*) has evolved from *Prakrti* and again moving towards that Similarly disease originates from health and again moves to that goal *Svāsthya* denotes the positive health while '*ārogya*, is the negative aspect of the same meaning diseaselessness The perfect definition of '*svastha*' (the healthy) as given by suśruta is the ideal and integral one and covers all-physical mental and spiritual-aspects[65]

Psychosomatic approach

As *Vāta*, *Pitta* and *Kapha* are three physical *dosas*, *Rajas* and *Tamas* are two mental *dosas*[66] They interact and thus cause physical and mental disorders[67]. Thus technically it is difficult to label any disease as purely physical or mental In fact, every disease has got psychosomatic origin in which one or the other might have upper hand *Caraka* has indicated this idea by describing '*santāpa' of jvara* as '*daihamānasa*' (psychosomatic), fever does not cause only the apparent pyrexia but also mental distress characterised by restlessness and depression[68] Moreover, mental emotions such as anxiety, fear, wrath etc aggravate physical *dosas*[69] while *Vāta*, Pitta and Kapha participate actively in causation of mental disorders like insanity and epilepsy

Concepts of Pathology

There are six progressive stages of vitiation of dosas as follows

(1) *Sañcaya* accumulation of dosa at its own site

(2) *Prakopa*. aggravation of *dosa* i e. over-flowing and finding channels to rush out

(3) *Prasara* spreading(through circulation)

(4) *Sthāna-samśraya* Localization at some site of lowered resistance

(5) *Vyakti* full-fledged manifestation of the disease producing symptoms and signs in

(6) *Bheda*: Specific chracterization of the disease (so clear as to help in differential diagosis) or in the case of abscess bursting out and release of pus on the surface [70]

Doṣas are indispensable factors in the diseases - process No disease in the body takes place keeping the dosas apart *Dosas* are real initiators and intimately related through all stages of the disease [71]

Disease is the outcome of the combination of three factors viz (i) *Nidāna* (external etiological factor) (ii) *Doṣas* (internal physiological factor) and (iii)*Dūṣya* (body tissues, organs and channels) [72]

Diseases are classified into two main groups according to predominance of physical or mental *doṣa* (1) *Śārīra* (physical) and (2) *Mānasa* (mental)[73]. They are again of two types (1) *Nija* - caused by innate factors (*doṣas*) and (2) *Āgantu* (exogenous) caused by trauma, stress etc [74] Some disease are caused specifically by a particular *doṣa* (and not by others) while others can be caused commonly by any *dosa* or *dosas* They are called *nānātmaja* and *sāmānyaja* respectively [75]

There are *rogamārgas* (disease-pathways) external, middle and internal according to the situation of the organs affected.[76]

Aggravated dosa may produce,at the affected site, some organic disease or functional disorder[77]

It was observed that '*pratyanīka bala*' (counter strength) e g body resistance counteracts the progress of the disease It is the decline of this protective power that makes the body prone to diseases[78]

There are three means of acquiring knowledge - 1 *Pratyaksa* (Perception), 2. *Anumāna* (inference) and 3 Āptopadeśa (preachings of scriptures and authoritative persons) They are all utilized in acquiring knowledge about disease First, informations about the nature and characters of disease are collected from the scriptures and tradition which serve as '*Āptopadeśa*' Then the physician proceeds to examine the patient with Perception and Inference [79] Based on these is prescribed the six-fold examination of the patient (sadvidha rogi-parīksā), e g by five senses and interrogation This was abridged into three-inspection, palpation (including percussion) and interrogation Suśruta emphasises on the former [80]

After gathering informations by *rogi-parīksā, roga-parīklā* (examination of disease) is done in order to diagnose the case This is based on five means (*Nidāna-pañcaka*) e g *Nidāna* (etiology), *Pūrvarūpa* (premonitory symptoms), *Rūpa* (signs and symptoms), *Upaśaya* (Therapeutic diagnosis) and *Samprāpti* (pathogenesis) [81]

Development of Basic Concepts of Ayurveda:

Glimpses of the basic concepts expounded in Āyurvedic Samhitās have been given

above Whether their roots are found in earlier works and whether they have been revised and improved in subsequent periods is worth examining The earliest Indian literature is Vedas Śivadāsa Sena (15th Cent A.D), a commentator on *CS*, has aptly explained the meaning of the word 'Veda' He says that Veda has two forms *Śabdarūpa* and *artharūpa* one is verbal and the other is in the form of object. The Veda in the form of words is contained in hymns but in the form of object it is the whole universe i e the objects in the universe are denoted by the words of Veda or the meaning of the words of Vedas are reflected in or represented by the whole universe

Āyurveda is mentioned as an *Upaveda* of *Atharvaveda* or *Ṛgveda*, or is itself the fifth Veda or an *Upāṅga* (a sub-section) of *Atharvaveda*. All this means that it was a part and parcel of Veda and it should exist even in initial form in *Mantras* and *Brāhmaṇas* We find that the present Samhitās of Āyurveda are in the form Of discourses or annotations the basis of which should either be *Mantras* or some *Śutras*. Though there is a mention of seers as authors of *Sūtras* (Sūtrakrt, *Cs.Sa* 6 21) none of such wugh there is a mention of seers as authors of *sūtras* (Sūtrakrt, *CS Sa* 6 21) none of such works is mentioned anywhere or found. The Brāhmanas are meant for esplaining procedures described in Mantras. Later works like *Mahābhārata*, *Rāmāyana* and *Purānas* are also considered as the collections of explanatory notes with illustrative cases or episodes Āyurvedic Samhitas fall somewhere in between these two chronological landmarks

It is intersting to note that the concept of Purusa (living person) as a man living in a city with nine gates *(navadvāra)* and as a lamp of life shining within a luminous case is given in *Atharvaveda* [82]

Imperishable *Ātman* and perishable *Pāñcabhautika* body are two main constituents of the Purusa They are succinctly mentioned in Yajurveda, in question - answer manner, as combining, mutually supporting during life and being disintegrated and uniting with elements of universe at the time of death The same concept is established more clearly as '*Saddhāštuka Purusa*' and '*Pañcamahābhūta-śarīri-samavāya Purūsa*' and '*Pañcatva-prāpti*' by Caraka and Suśruta respectively

Similarly description of physiological concepts viz *Tridhātu* i e *Tridosa*, *Saptadhātu*, and, five divisions of *Vāyu*, are also mentioned in Vedas Clearly

We also come across a reference wherein the word *Vāyu* is replaced by '*Āyu*' and *Uvata* explained that here the letter 'V' of '*Vayu*' is to be understood as 'apostrophe' Reflection of this is found in *Caraka-samāhitā* "Vāyurāyur balam Vāyur Vāyurdhātā śarīrinām' (Ci-27)

Sapta dhātu - seven dhātus- are also mentioned in covert and overt manner as '*sapta rsayah*' and also categorically as *Tvacā*, *Lohita*, *Māmsa*, *Asthi*, *Majjā* and *Śukra* Hemcandrācārya (11th Cent A D) in his *Abhidhāna-cintāmaṇī* cites respective *dhātus*

Tridosas and seven *dhātus* are mentioned as supporting agents of all living creatures in the *Atharvaveda* [83]

The concept of *Agni-Soma* as all-pervasive forces equally controlling *Loka* and *Puruṣa* by initiating bisexual creation is enunciated in *Praśnopanisad* and *Āyurveda* has applied the same in characteristic identity of *Śukra-Śonita* and *Dvividha Vīrya* (*śīta and usna*) related with these twin forces of universe [84]

Similarly *Kāla* in the form of *Samvastsara* with arrangement in six seasons in pairs of two months is mentioned In Yajurveda It is incorporated in Samhitās of Āyurveda in the same order beginning with *Vasanta* and *Madhu* and *Madhava* two months assigned to it Rest of the seasons and pairs of months assigned to them are in the same succession in Yajurveda and Āyurveda The concept of six seasons with introduction of *Prāvṛt* and deletion of *Śiśira* needful for the application of *Pañcakarma* as described in *Samhitās* of Caraka and Suśruta, seems to be a later development.

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24. *SS SU* 1 22, 40 5, 42 7
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45 *SS SU* 21 8
46 *AH SU* 1 7.
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48 *SS SU* 15 3(2), 21 10, Nı 1 12
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50 *CS SU* 6 6-7, 17 114,AH SU. 1.7-8
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53 Ibıd Vı 5, Cı 8 39.
54 Ibıd SU 28 4, Ci 15 7-8, 13,15, 38, 56, AH SU 12 10-12
55 CS Cı 15 16-19, *SS SU* 14 10
56 *SS SU* 15 3
57 Ibıd 15 19
58 Ibıd 15 22, *CS SU* 17 74, 30 6-12
59 *Ojas* beıng the essence of *dhātus*,theır number does not exceed seven See Cakra. on CS SU 17 73-75, Dalhana on SS,SU 15 21-22
60 *SS SU* 15-19-20 *Bala* ıs mentıoned as of three types-*sahaja* (ınnate), *kālaja* (caused by tıme factor, age and seasons) and *yuktıkrta* (produced by other means such as dıet, drugs etc)* (*CS SU* 11 36)
61 SS Sa 4 63, CS Vı 8 95
Caraka does not call, technıcally, preponderance of *dosa* as *prakrtı* but only as *vātala*, *pıttala* etc
62 *CS Vı,* 8 94
63 Ibıd Vı 6 13, Sa 4 36-39, SS Sa 4 64-99
64 CS SU 9 4, AH SU 1 20
65 SS SU 15 41
66 *CS SU* 1 57, 8 5, Vı 8 119, Sa 1 36, 2 28, 4 34
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70 *SS.SU.* 21.36-37.
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72. CS.Ni. 4.4.
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75. Ibid. SU.20.10.
76 Ibid.SU. 11.48-49.
77. Ibid. SU. 20.12,15, 18, 20
78. Ibid. Ci. 3 69.
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80. *SS.SU.* 10.4.
81. AH.Ni. 1.2.
82. AVS. 10.2.31.
83. Ibid. 1.12.3; 20.83.1, 92 9 (with Sāyana's comm.)
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DRAVYAGUṆA (PHARMACOLOGY): ORIGIN AND DEVELOPMENT

K RAGHUNATHAN and S.D DUBE

Man has been using food and drug for preservation of health and alleviation of disorders since pre-historic times In Vedic age, these were divided into two broad categories — *Oṣadhi* (small plants) and *Vanaspati*[1] (big plants). The former were generally used as food and drug. Gradually each of the above groups was subdivided and two more groups — *Vīrudh* and *Vānaspatya* (*Vṛksa*) were defined.[2]

Apart from plants, animal products and minerals were also used as food and drugs [3]

Probably the first attempt to systematize and explain the plants was made in Vedic period the account of which is found in *Osadhi-sūkta* of *Rgveda* (10 97.1-23, also AVS. 8.7.1-8; 11.6 16-17). Here characters, habitat, classification and uses of plants are described It is clearly stated how the drugs after ingestion circulate in organs and joints where they act Besides intake, plants were also used as *maṇi* (amulet) to ward off evil spirits.[4] The physician was in intimate contact with herbs and used them for destroying the invisible harmful agents and diseases [5]

The therapeutic use of drugs was initially prompted by the Doctrine of Signature based on similarity of colour or form such as use of lac in haemorrhage, *Mañjiṣthā* (Rubia cordifolia) in blood disorders, *Haridrā* (curcuma longa) in jaundice, twisted fruits of helicteres isora in twisting pain in abdomen, testicle-shaped seeds of *Kapikacchū* as aphrodisic, the perennial roots of *Punarnavā* regenerating profusely in anaemia and debility etc

This was further established on observation of the effects of plants on animals In AVS well-being of man is invoked with the plants grazed by cows, goats and sheep [6] It indicates that their useful effects were confirmed on observation It is to be noted that the diuretic and galactagogue groups consist of grasses[7] which are commonly used as fodder for animals Obviously their effects would have been ascertained after observing them on animals

Moreover, some animals were particularly attached to certain plants for their nutrition or protection Plants like *'Vārāhī'*, *Nākulī* etc belong to this group [8]

Not only animals but man also analysed the effects of the plants (roots, fruits etc) used as food or drug When Suśruta says that drug is known from those who used roots

(*mūlāhāra*)[9] he means not only morphological characters of plants but also the pharmacological effects

Evolution of basic concepts

To furnish rational explanation of the use of drugs, basic concepts were evolved on the basis of the Law of Uniformity of Nature (*Lokapuruṣa-sāmānya*). It was observed that both drugs and the living body have Pāñcabhautika composition in common[10] and as such drugs, on being used judiciously, can alter the body components accordingly.[11]

But the difficulty was how to identify the particular *bhautika* composition of a drug This problem was solved by determining the *bhautika* character of six *Rasas* It was easy to perceive the taste of a drug[12] and the bhautika character of each Rasa was determined by inference from observing its effect on *Tridoṣa* [13] For instance, *Madhura* (sweet) *Rasa* pacifies *Vāta* and Pitta and aggravates *Kapha* and as such is known to be composed of *Pṛthivī* and *Ap bhūtas* which are similar to *Kapha* (consisting of the same *bhūtas*) and contrary to *Vāta* (due to solidity of *Pṛthivī*) and *Pitta* (due to coldness of *Ap*). Thus Rasa became the index of the *bhautika* composition and pharmacological action of a drug and that is why it occupied the most prominent position among the other concepts of pharmacology. The authors have dealt it exhaustively in a separate chapter.[14]

But in some cases, this general concept failed to explain the phenomena such as in case of *Pippalī* which is pungent in taste (*Kaṭurasa*) but exerts anabolic effect on the body which is contrary to its composition Therefore, it was considered that the digestion had an important role on the fate of the drug because all drugs have to pass though it. The bhautika composition of the drug may continue as it is even after digestion while in some cases it may be altered altogether deciding its future action To explain this phenomenon the concept of *vipāka* was evolved [15]

Even during the Vedic period, it was thought that drug acts because of its inherent power. This was termed as '*Vīrya*'. By Law of Agreement in Presence and Absence (*anvaya-vyatireka*), it was proved that the action of the drug depended solely on *Vīrya*.[17] For practical convenience, *Vīrya* was defined as having character of properties which produced similar ones in the body Initially it was defined as of eight types on the basis of resultant actions but again was fixed in two broad divisions — *śīta* and *uṣṇa* [18]

But again certain specific actions of drug like emesis, purgation etc could not be explained by *Vīrya* Moreover, it could not explain also the effects of magical charms, incantation etc Thus concept of '*Prabhāva*' was evolved which explains the specific action of drug and also the subtle actions of divine therapy which could not be explained otherwise.[19]

The drug itself possesses *Guna* (properties) and *Karma* (action) [20] Properties may decide the nature and extent of *Karma* but *Karmas* do not reside in *Gunas* but in *Dravya* [21]

Drugs are applied on the law of *sāmānya* (similarity) and *viśeṣa* (contrariety) Drug increases body factors which are similar in composition and decreases those which are contrary in the same [22]

Though indications of the above concepts are found in Vedas, they were established on sound footing only in Āyurvedic Samhitās In our opinion, the initial treatises of Agniveśa etc had strengthened the foundation laid down in Vedic period but probably it was only after the redaction of the ancient compendium by Caraka that these concepts attained to their perfect shape This can be imagined by comparing the relevant chapters of *CS* and *BS* - the latter deals only with Rasa while the former, besides, deals with the other concepts as well

Drugs

Drugs were classified from different angles such as source, effects on *doṣas*[23], action of different organs etc. Their actions on different organs and systems were also defined in technical terms such as *dīpana*, *grāhī* etc Caraka and Suśruta have defined fifty and thirty seven groups of drugs accordingly [24] Various aspects of administration of drugs were also decided such as dosage, pharmaceutical forms etc

Soma, the king of herbs, is described exhaustively in *Rgveda* (*Mandala* 9). In *CS* and *SS*, some other divine herbs (*divya oṣadhi*) having powers like those of Soma were added[25] but later on due to nonavailability of and difficult access to them, these were dropped from the Āyurvedic texts Vāgbhata did not accommodate them in his compendium, but these were replaced by other useful drugs. The number of drugs increased gradually and considerably from *Rgveda* and *Atharvaveda* to Āyurvedic Samhitās and to later *nighanṭus* A large number of drugs were introduced which are not found in Vedas Even in *Brhattrayī*, a gradual development in this respect can be seen from Caraka, through Suśruta, to Vāgbhata For instance, Śukanāsā[26] is not found in *CS*, it was introduced by Suśruta Similarly, *Gajacirbhata*[27] is found in AH but is not seen in either of *CS* and *SS* Not only drug entities but new synonyms were also discovered from time to time which added information about them For instance, a new synonym *Kokilāksaka*[28] was coined by Suśruta for Iksuraka which denotes the colour and shape of seeds Vāgbhata, first of all, has given the synonym *Kaśmīraja*[29] for *Kunkuma* which denotes its cultivation in Kashmir, previously it was '*Bāhlīka*' grown in or obtained from *Bāhlika* region He has said *Lākṣā* as *Kṛmijā*[30] which explains the origin of lac from insects Drdhabala, during redaction, has also introduced many new drugs in *CS* such as *Uccatā*[31] which is found only in Drdhabala's portion of *CS* The nighantus further advanced the idea by introducing new drugs like *Kupīlu*, *Kumārī* etc and synonyms like *Caksusyā* for *Kulatthikā*, *Kastūrī*, so famous today, is not mentioned in ancient Āyurvedic Samhitās

In ancient times, there was trade connection of India with the outside world and drugs were exchanged through this route Spices, aromatics and other drugs were exported while other drugs like *Bāhlīka* (*Hingu* and *Keśara*), *Madhuka* (Glycyrrhiza) were imported [32]

The trade of Marica and Madhuka was also through land-route (*sthalapatha*) and that is why have been said as '*sthālapatha*'[33], of these the former was exported while the latter was imported.

Literature

The literature on *Dravyaguṇa* is generally known as '*Nighaṇṭu*'. Its origin goes back to Vedic nighaṇṭu which was explained and annotated in Nirukta, one of the six aṅgas of Veda Nighaṇṭu contained synonyms which throw light on different aspects of the entity and thus expose the hidden meanings [34] On the line of Vedic Nighaṇṭu, Nighaṇṭus in Āyurveda were also composed which described drugs and food substances by way of synonyms It is said that the ancient saṃhitās had, in the body of their text, a Nighaṇṭu as an appendix.[35] In the present *CS*, there is no Nighaṇṭu portion, the drugs and food substances are dealt there mainly in *bheṣajacatuṣka* and *āhāracatuṣka* respectively. There is indication, on the basis of a ms., that the SS had such nighaṇṭu portion.[36] On the drugs mentioned in AH. a separate nighaṇṭu named '*Aṣṭāṅganighaṇṭu*' by Vāgbhaṭa came into existence. The *Siddhasāra* also has its Nighaṇṭu at the end. This tradition continued further and Nighaṇṭus like *Paryāyaratnamālā*, Dravyāvalī, *Madanādinighantu*, *Śabdacandrikā*, *Nighaṇṭuśeṣa*, *Hṛdayadīpaka* and *Śivakoṣa* were composed on this line The *kosas* like *Amara*, etc also had a *Vanausadhivarga*

Mere enumeration of synonyms did not suffice and satisfy the physicians who required more information about the drug action with its rationale To fulfil this need, another line of nighaṇt uswas started which, alongwith synonyms, also described the properties and actions of drugs and foods The initial form of this is seen in Vāgbhata's work where, under a separate heading (*ausadha-varga*), the drugs have been described with properties and actions in a systemtic order.[37] Before this, though Suśruta dealt with them in groups, individual entities were not described This tradition developed with the composition of *Dhanwantri-nighantu*, *Dravyagunasaṅgraha*, *Soḍhalanighantu*, *Madanavinoda*, *Kaiyadeva-nighanṭu*, *Rājanighaṇṭu* and *Bhāvapakāśa-nighaṇṭu*

Lexical Nighaṇṭus

The following are the important ones among the nighantus having only synonyms of drugs.-

1 *Aṣṭāṅganighaṇṭu* -

It contains the drugs enumerated in gaṇas of AH, in addition having a section on miscellaneous drugs (*Viprakīrṇa dravya*) which are outside the *gaṇas* [38]

The author is Vāhaṭa or Vāhaṭācārya who is dated 8th cent A D This Vāhata seems to be different from the author of AH'[39]

2. *Siddhasāranighanṭu* -

There is a nighantu appended to the *Siddhasāra* composed by Ravigupta, son of Durgagupta, a Buddhist scholar It contains 193 verses and a *dravyāvalī* at the end. It describes the drugs coming in the ganas enumerated in the second chapter of the text. Here *Śālasārādi gana* of Suśruta is *Śālādi gaṇa*. Emmerick has fixed its date as 7th cent A D [40]

3 *Paryāyaratnamālā* -

This is also popularly known as *'Ratnamālā'* Its author is Mādhava, son of Indra Kara, and a resident of Silāhrada Tarapada choudhury takes him as the same who has authored the *Mādhavanidāna* and thus places him in 7-8th c A D [41]. But as the father's name differs (father of the author of the *Paryāyaratnamālā* is Indra Kara while that of the author of the *Mādhavanidāna* is Indu (or Candra) Kara), their identity can not be proved However, as the *Paryāyaratnamālā* is quoted by Sarvānanda (12th c. A.D) it must be placed before that Its date has been fixed as 9th c A.D.[42]

4 *Dravyāvalī* -

This is the source and ground material of the present Dhanvantarinighaṇṭu It is not published, MSS. are available[43] The work must be present at least one or two centuries before the *Dhanvantarinighantu* (10th cent. A.D)

5 *Haramekhalānighantu* -

This is also a nighantu appended at the end of the text of Haramekhalā[44] Unlike other nighantus, it is in prose The author is Māhuka, son of Mādhava, grand son of Kavimandana and resident of Citrakūta It is quoted by Niścala Kara[45]

The date of Haramekhalā is fixed as 9th cent A D

6 *Madanādinighantu* -

It is also known as *Gananighantu* because it deals with the drugs enumerated in madanādi ganas of AH[46] It also contains, like the *Astānganighantu*, a section on miscellaneous drugs[47] Its author is Ravinandana (or Ratnandana according to Tibetan version) Candranandana is also the author of the comm *padārthacandrikā* of AH The Bombay edition of the comm raises some doubt about the identity of both the authors as the parentage and religious faith differ[48] The following works of Candranandana are preserved in Tibetan Tanjur [49]

1 Vaidya Astāṅgahṛdayavrtti

2 Vaidya Astāṅgahrdayavrttau bhesajanāma-paryāyanāma

3. Padārthacandrikā-prabhāṣā nāma aṣṭāṅgahṛdaya-vivṛti

Candranandana-nighaṇṭu is quoted by Kṣīrasvāmī (11th cent. A.D.) and as such it is placed in 10th cent A.D.

The following nighaṇṭus quoted by Ksīrasvāmī must be earlier than 11th cent. A.D.-

1. *Indranighaṇṭu*
2. *Candranighaṇṭu*
3. *Niminighaṇṭu*[50]

Pharmacological Nighaṇṭus

In this group, there is only one nighaṇṭu belonging to our period e.g. the *Dhanwantarinighaṇṭu.* It is, in fact, a revised edition of *Dravyāvalī* enlarged by addition of properties and actions in description of each drug. The author is Mahendra Bhogika.

It is quoted by Ksīrasvāmī (11th cent. A.D.) and as such is earlier then that, but later on some additions were made such as Ahiphena, Agnijāra, Jayapāla, Vijayā etc and also mercurial processings which belong to 12-13 cent A.D Thus the date of *Dhanvantarinighaṇṭu* may be fixed as 10-13 cent. A.D.[51]

References

1 *RV* 7 4 5, Br Up 3 2 13.
2 AVS 8 8.14, 11 9 24, 15 6.2
3 *CS SU.* 1 68
4 *AVS* 19 31 (*audambara mani*) 2 4, 19 34, 35 (*jangida mani*) *19 28-30 (darbha-mani) etc*
5. *RV 10 97 6.*
6 *AVS. 8.7.25*
7 *CS. SU.* 4 12 15
8 AVS 8 7 23, 24
9 SS SU 36 10
10. CS Sa 5 3, 4
11. Ibid SU 41 12
12. *Raso nipāte dravyānām*-CS SU 26 66
13 *Te nirdhāryante'numānāt-Rasavaiśesika* 44
14 *SS SU.* 42, AH SU 10
15 *CS SU* 26.58-63, 66, SS SU 40 10-12, AH SU 9 20-21
16 AVS 1 35 3 (*vanaspatīnām uta vīryāni*), also 12 1 8 (*nānāvīrya osadhih*) Commenting on *śatavicaksanāh* (AVS 6 96 1), Sāyana says-'*Rasa-vīrya-vipākena nānāvidhajñānopetāh*'.

17 *CS SU* 26 65
18 Ibid SU 26 64
19 Ibid SU 26 67-70, AH SU 9 26
20 *CS SU* 1 51
21 Ibid SU 26 36
22 Ibid SU 1 44-45
23 Ibid *SU* 1 67-75
24 Ibid *SU* 4, SS SU 38
25 CS Ci 1 4 6,7, SS Ei 30 5 Suśruta has also described *Soma* in detail in a chapter (Ci 29)
26 *SS SU* 42, 18, Ci 1 114 etc
27 AH Ci 14 38
28 *SS U.* 58 44
29. AH U 37 44
30 Ibid U 40 48.
31 CS Si 12 45, 46, 54
32 Motichandra, Sārthavāha, PP 31, 43, 67-211
33 Kāśikā. 5.1.77
34 Nirukta 1 1 1 (*Nigamanān nighantavah)*
35 *Sharma Hemaraja. Kāśyapa-samhitā*, int p 58
36 Ibid
37 AH SU 6 143-172
38 Sharma P V (ed) *Aṣṭānga-nighantu*, Kuppuswami Shastri Research Institute, Madras, 1973
39 Ibid int p 5
40 Emmerick R E *The Siddhasāra of Ravigupta*, int p 1
41 Chowdhury Tarapada *Parvāyaratnamālā*, Patna University Journal, pt 2, 1946, int p 1-2
42 Sharma P V AVI, p 394
43 B H U C1979, M R I 2985, S B V 1/188
44 Sastri K Sambasiva (ed) *Haramekhalā*, pt I*-II, Trivandrum Sanskrit series, Trivandrum, 1956, 1958 *Nighantu* covers pp 78-88 in pt II
45 *Niścala's* comm (CD 65 54)
46 Mooss N S (ed), Kottayam, 1985
47 Sharma P V (ed) BIIHM, vol XVI, 1986 (supplement)
48 Ibid *Some new facts about Candranandana*, *Ancient Science* of life, vol VI, no 2, Oct 1986, pp 77-79
49 See ch on *Tibatan Medicine*
50 Sharma P V AVI , pp 397-400
51 Idem *The Date of Dhanvantari-nighantu I J H S* , vol 5, no 2, pp 364-370 1970

11.3

PHARMACY IN ANCIENT INDIA

PREM VRAT SHARMA and A.V. SHARMA

Man, since prehistoric times, has been using drugs for preservation of health and alleviation of disorders These he must be taking in suitable forms which were agreeable as well as effective Initially he might be taking drugs by Crushing with his own teeth[1] but later on in palaeolithic and neolithic ages most probably he used to crush the drugs with stone slabs and expressed their juice when fresh or made powder when dry After invention of fire, they were subjected to heating and boiling and thus the preparations like *phāṇta* and *kvātha* came into existence So juice, paste (or powder), cold infusion, hot infusion and decoction, these five are the basic pharmaceutical preparations coming down since antiquity in some form or the other.

In Vedic period, more developed picture of pharmacy is observed. *Ṛgveda* (*Mandala* 9) describes in detail, the preparation f some-rasa and during this course one may visualise a number of pharmaceutical processings and appliances Some have identified the word *'Trikadruka'* as an instrument for extracting Soma juice[2] but Sāyana interprets it otherwise [3] In *Atharvaveda*, a number of drugs have been applied externally as well as internally and in different forms [4] *Kauśika-sūtra* describes such procedures in detail.[5]

It is only from the period of Āyurvedic Samhitās that a systematic arrangement of the subject is found In *CS*. the word *'Kalpa'* is coined for 'preparations' and though it may be added to both *'āhāra'* (*āharakalpa*) and *'bhesaja'* (*bhesajakalpa*), alone it generally means pharmaceutical preparations [6] *'Bahukalpa'* (having numerous preparations) is a character of an ideal drug [7] Caraka has named the section dealing with this subject as *'Kalpopanisad'* or *kalpasthāna*. Later on connotation of the term was extended so as to cover specific preparations for *Viṣa*[8] and *Rasāyana*[9].

The primary pharmaceutical preparations, according to Caraka, were five known as *pañcavidha kasāyakalpanā*[10] These are

1 *Svarasa* (expressed juice)
2 *Kalka* (paste or powder)
3 *Śrta* (decoction)
4 *Śīta* (cold infusion)
5 *Phāṇta* (hot infusion)

'Kalpanā' has relevance to application and also refinement[11] Of the above five, potency decreases in the successive order thus they can't be used all everywhere but

depend on the severity of the discease and the strength of the patients as well as on specific drugs [12]

The word '*Kaṣāya*' means '*niryāsa*'[13] (extract) Its derivation given by *Bhānuji Dīksita* (*Kasati kantham, kasa himsāyām*) does not throw anyt light on its basic character In fact, this should be analysed as *kasāt* (*kasanāt pīḍanāt*) *ayate prāpyate iti kasāyaḥ*' (*kasāya* is that which is obtained (as extract) by pressing etc. which transform the drug)

'*Kaṣāya*' can be prepared of all drugs except salt and that is why drugs belonging to the categories of five rasas (except *lavana*) are said as sources of *kaṣāya* (*kaṣāya-yoni*)[14] For exclusion of *lavana rasa* (salt) Cakra gives the following reasons -

1 *Lavana* is seldom use alone, whereas *madhura* etc are used independently.
2 In salt, there can be no pharmaceutical form as in other drugs

No juice can be expressed out of it nor can it be made into paste in combination with water wherein it dissolves completely Even if it is powdered there is no particular efficacy in that form in comparison to the former one (pharmaceutical processings are designed to produce particular efficacy)[15] Decoction, cold infusion and hot infusion are intended for extracting the small active fraction in the liquid leaving out the useless portion,[16] but this also is not possible in case of salt

It would be interesting to trace the development of each basic preparation.

1 *Svarasa* — Juice extracted by mechanical pressing is called '*svarasa*' '*Sva*' here is significant as it denotes that the process is to be done alone and no water etc. should be added to it *Svarasa* consists of the whole extract of the drug and as such contains the total essence of the active fractions So it has many-sided activities but at the same time it is heavy[17] (in assimilation) and as such is not to be used in weak partients or mild disorders Moreover, the constitution and attitude of the patient is also to be considered because some like this form while others may not like[18]

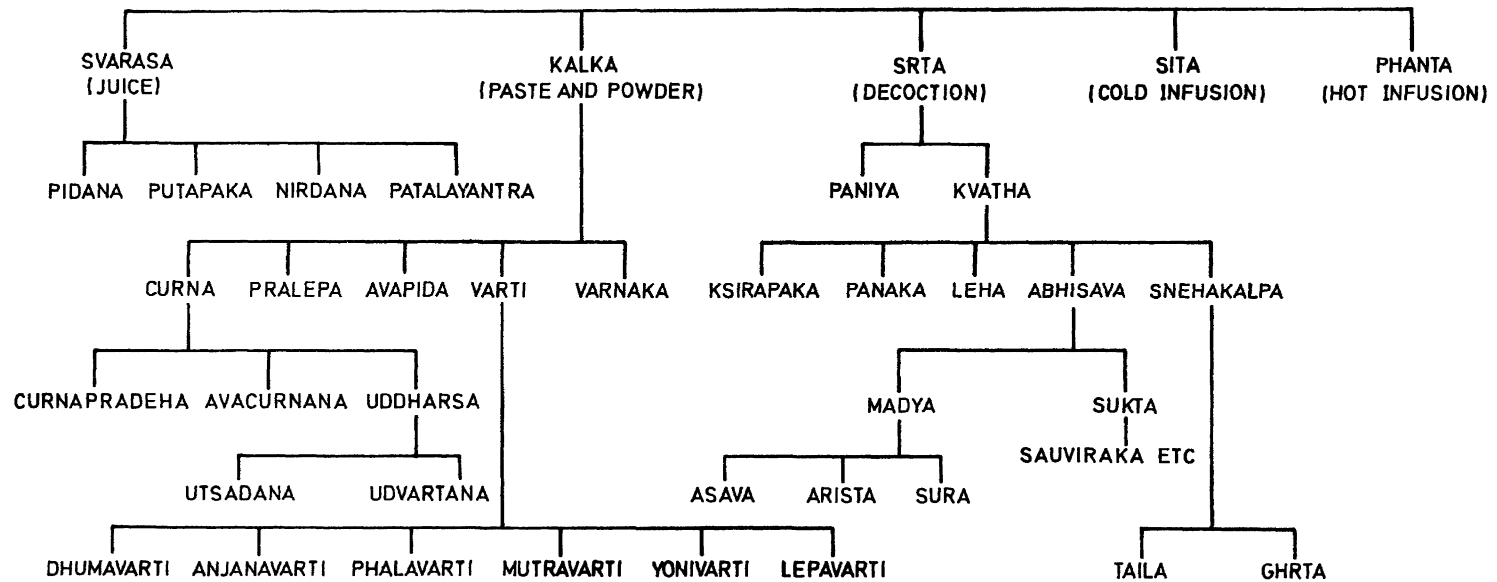
The advantage of the total drug is that its different consitituents balance each other and thus do not produce any harmful effect which according to Āyurveda, should be the ideal of administration of drug [19]

Svarasa, by the above method, can be extracted in case of fresh drug only and as such for dry and hard drugs another method was invented which is known as *putapāka* (closed heating) In this process, the drug is covered with earthen paste and is heated on fire and then pressed This is described by Suśruta[20] for extracting juice from different drugs Caraka has used it only for making the pulp soft so that it may be made into paste easily[21]

Another method of heating is *nirdāha* (open heating) and the juice so extracted is called '*nirdāha-rasa*' It is applied in case of living plant The root or the branch is cut

Table 1

EVOLUTION OF PHARMACEUTICAL FORMS OF VEGETABLE DRUGS



at the lower end and fire is put on the upper end. The juice so coming out of the former is collected in some vessel[22] *Svarasa* may also be extracted by heating in *Pātāla-yantra* (CS Ka 1 20)

In absence of svarasa, the powder of the drug may be kept in water for twenty four hours and then pressed and filtered The resultant liquid may be used (CS. Ci. 1 2 12). In fact, it is cold infusion

2 *Kalka*—The drug is subjected to grinding after mixing with water so as to make it a pulp or paste It is known as '*kalka*' When water is not added to it, it would be reduced to fine powder known as '*cūrna*' thus *cūrna* is also included in kalka[23] In case of hard drugs, *kalka* is prepared by close heating.[24]

Kalka when applied as a paste is known as '*pralepana*'[25] and it is known as '*avapīḍa*'[26] (a type of nasya) when it is pressed against a spot in nose to stop haemorrhage. Some take it as juice extracted by pressing[27] The secondary derivatives of kalka are as follows:

(a) *Varti* — the pulp is rolled and made into a wick-shaped stick According to use, they fall in the following categories
   (a) *Dhūmavarti* (CS SU 5-24, Ci 3 2 55, SS Ci 40 4)
   (b) *Añjanavarti* (CS Ci 9 67).
   (c) *Phalavarti* (CS Si 7.10; SS Ci.14.12)
   (d) *Mūtravarti*[28] (CS. Si 9 59).
   (e) *Yonivarti* (*vartikā*) (CS Ci 30 109)
   (f) *Lepavarti* (SS. Ci 9 26)
   Caraka mentions '*Vartikalpanā*[29]

(b) *Varṇaka* — Pastes used as cosmetics to improve the lustre of face and the complexion of skin is called '*Varnakạ*'[30]

   Cūrna is potentiated if impregnated with its own juice[31]

   Apart from intake, powders are used in the following ways

(A) *Cūrṇapradeha* — powder is mixed with oil etc. and applied on skin[32] mostly in skin diseases

(B) *Avacūrnana* — used as dusting powder on wounds etc [33]

(C) Uddharsa-It is used as rubbing powder[34] Suśruta, besides *uddharsana*, mentions '*utsādana*'[35], the former is without oil while the latter is applied with oil[36] udvartana is also there[37]

3 *Śrta*—It is the preparation by cooking (*pākya*) The following preparations come under this group

(a) *Pānīya* (Medicated water) — water boiled with some drugs is used in fever etc such as *ṣadaṅga pānīya*

(b) *Kvātha* (Decoction) — Drug is boiled in sufficient water[38] till water is reduced to one-forth or more This is a common method for extracting water-soluble fractions

'*Pramathyā*' is the technical term for the appetising and digestive decoctions [39]

The following are the secondary derivatives of *Kvātha.*

(1) *Kṣīrapāka* — (Milk decoction)-Drug is boiled in milk adding sufficient water and heated till water is evaporated completely[40] such as *ksīrapāka* of *arjuna*. In addition, there are preparations in other milk products such as supernatant fatty layer, curd etc.[41]

(2) *Pānaka* (Syrup)[42]

(3) (a) Leha or Avaleha (Linctus) — Juice or decoction is again cooked till it became semi-solid[43] There is also a form known as '*Rasakriyā*'[44]. Similarly CS. (Ka 1 20) describes a '*Phānitayoga*' in which juice is cooked and made into leha till it becomes sticky[45] (Tantulībhāva) Leha is also formed without cooking

Phānita, in fact, is a form midway between leha and *rasakriyā*

(b) *Modaka* (bolus) — *Leha* further condensed become *modaka* [46] *Modakas* generally have the base of sugar they sometimes are covered with a layer of the powder of the drug[47] There were also *Śarkarāmodakas* evidently made of sugar[48] *Modakas* were also prepared without cooking

(c) *Vataka*, *Guda*, *Gudaka* (big pills) — After cooking till the product is solidified, it is made into boluses of the size of *badara* or udumbara fruit[49] Sometimes '*modaka*' is also said as 'having the size of *udumbara*'[50]

(d) *Gudikā* (pills)-when the former is reduced in size, it is called *Gudikā*[51] (or *Vatikā*, *Vatī*)

These three preparations differ mostly in size

(4) *Abhiṣava* (Fermented preparations)-

When decocted or undecocted liquid is kept for a certain period mixed with yeast it undergoes process of fermentation The product when alcoholic is known as *madya*, its main forms are *āsava* and *arista* In medieval period, *āsava* and *ariṣṭa* were differentiated on the point that the former was not boiled whereas the latter was boiled before fermentation[52], but, in ancient period, there is no such

demarcation of ariṣtas, some are boiled and others are not; similarly in *āsava* too, both methods are found[53] In *SS* also, the same position is observed Ḍalhaṇa, however. makes distinction by observing that *Ariṣta* is *dravyapradhāna* (Having predominance of drugs), *āsava* is *drava-pradhāna* (having predominance of liquid) and *madya* is *ubhayapradhāna* (having both)[54].

Apart from *āsava-ariṣta*, there is also a *surā-kalpa* for which decoction is kept along with yeast for fermentation[55] In *CS* this is like tincture. The drug is kept in *surā* (alcohol) for certain period and the resultant liquid is taken[56].

In these preparations, alcohol-soluble fractions are extracted

Another group is of acidic preparations which are formed after fermentation such as *sauvīraka*, *sīdhu* etc.

(5) *Snehakalpa* (Fatty preparations)-

Taila (oil) and *ghṛta* (ghee) are cooked with decoction and paste of drugs. By this process, fat-soluble fractions are extracted and contained in the product. *Sneha-pāka* is said as of there types according to the degree of cooking-mild, medium and intense [57] There is one '*snehaśarkarā*' which, alongwith fats, contains sugar[58] Cakra, however, comments that because of its solidification like honey-sugar it is called as *snehaśarkarā*[59] Cooking of Tailas was repeated hundred times[60] or even more in order to make it more efficacious

The solid preparation of *ghrta* in the form of *Vaṭaka* is called *sarpirguḍa* [61]

(6) *Śīta* — (cold infusion)

The extract which comes out on keeping the drug in water for the whole night is called *śīta*[62].

(7) *Phānta* (Hot infusion)

The drug is kept in hot water for some time and by pressing and filtering the extract is taken This is *phāṇta*[63] It is also used, like decoction, in preparation of *ghṛta*[64]

Other Preparations

1 *Piṣṭi* — Pearl, coral etc , are ground without any heating, and made into fine powder It is known as *piṣṭi* Caraka mentions *piṣṭe mauktike*'[65] (ground pearl)

2 *Ayaskṛti*[66] — This is processing of metals. Thin sheets of metals are heated and dipped in liquid This process is repeated till they are transformed into fine powder[67]

3 *Bhasma* — Fine ash of drug was called *Bhasma*. Caraka has used this word in connection with horns, bones etc. of animals and not in that of metals, so also does Suśruta in connection with plants[68] Masī'[69] is black ash perhaps coarser than bhasma.

4. *Kṣāra* (Caustic Alkali) — *kṣāra* is one of the parasurgical measures in Indian Medicine. The ash of plants is dissolved in water and decanted a number of times [70]

By analysis of the above facts, it is quite evident that the object of pharmaceutical processing was to extract and retain the active fraction of the drug so as to make it as maximum effective At the same time it was also desirable that the drug should be agreeable and acceptable[71] so that it is ingested and assimilated properly and there is not the least rejection on the part of the recipient. Keeping this in view, a large number of preparations of drugs are in the form of or mixed with edible preparations, particularly in the context of purification therapy (*pañca-karma*). There is a wide range of choice in the preparations of different categories such as edible, beverages and other medical formulations[72] keeping in view the temperament and constitution of the patient and also the effectivity of the durg There is an interesting formulation which is administered in a flower to smell[73]. In specialities such as *śalya*[74](surgery) and *śālākya*[75] (supraclavicular diseases) various pharmaceutical preparations have been designed. In Toxicology, the anti-poison formulations are known as *agada*' There are also a number of preparations for enema[76]

Basic Principle of Pharmaceutics

Pharmaceutics deals with preparation of drugs and its object is to present drugs in agreeable and effective form The former guarantees the receptivity of the host which prepares the way but the latter is the main one. The drug should possess maximum effectivity without causing any harm.

In Indian medicine, effectivity of a drug depends on *vīrya* which is defined as the power by which drug acts[77] Hence to maintain the effectivity of the drug during pharmaceutical processing means to extract the vīrya in the product in the best possible way, because if the *vīrya* dose not come or comes incompletely the product would not be capable to exert the desired effect

In decoctions, at least four times water is given so that the vīrya is extracted completely[78] Candraṭa says, in this context, that if drug is boiled with milk, curd etc. it is not extracted and as such water four times should be added to it[79] Here 'na muñcati rasam' is significant which means — "(the drug) does not set apart the rasa (essence = *vīrya*)"[80] NK again says — the addition of water four times is for transmission (*Saṅkrānti*) of *vīrya*[81] (from crude drug to the product) In *Bhārgīguḍa*, the text prescribes four times water for decocting the drug Thereon NK comments that here the elders recommend the double (of that prescribed) so that the vīrya is extracted completely.[82] Caraka, in preparation of *Cyavanaprāsā*, says that the decoction of drugs should be known as completed when they become devoid of *rasa* (*gatarasa*) It

means that the *rasa* (*vīrya*) of drug leaving out are transmitted to the product which is also called *rasa* (Liquid extract)[83] This stage (*Gatarasatva*) is arrived at generally when water on boiling is reduced to one-fourth[84] Regarding '*daśapākabalātaila*', it is explained that it is cooked ten times for achieving the *vīrya* in high degree[85] If a drug is applied externally, it enters into the hair follicles and reaches in through the opening of veins[86]. The same paste should not be applied again as it has already lost its *vīrya* and as such is useless [87]

Thus different vehicles and their quantity are decided with a view to achieve the above objective. The vehicles such as water, fat (oil-ghee), alchol etc. are used to extract the *vīrya* according to its solubility in the respective medium

Though '*vīrya*' (*śakti*) is a quality, it comes out with the *dravya* (the active fraction) whereing it is inherently located, and because there is practical identity of *śakti* (quality) and *śaktimān* (active fraction) the latter is also called '*vīrya*' In such fraction the essence of *pañcabhūtas* exists in concentrated form.[88] Hence the word '*vīrya*' used in the above contexts does not mean anything but the active fraction of the drug.

In order to increase or decrease the potency of a drug or a formulation, the following methods are auggested-

1. A drug may be further potentiated by impregnating it with own juice or the juice of a drug similar in *vīrya*

2. Potency of a drug may be modified from lower to higher side and vice versa by combination, elimination, timing, processing and mode of administration [89]

Pharmaceutical Processes

A number of processes are employed in preparation of drugs. The following are the common ones.

1.	*Anuśo bhedana* (CS Vi 8 139)	Fine cutting
2.	*Apakarṣana* (CS. Vi 8 149)	Elimination
3	*Abhiṣavaṇa* (SS Ci. 10 8)	Fermentation
4	*Avaghaṭṭana*(CS. Vi 7 17,) (SS SU 11 11)	Stirring
5	*Avasiñcana* (CS Vi 7.25)	Sprinkling
6	*Ādityapāka* (CS. Ci 26 267)	Sun-cooking
7	*Āpothana (CS Vi 7 23, Ci. 1.1 46)*	Crushing
8.	*Ālodana* (CS. Vi 7 26; Ci 1 3 19)	Mixing a liquid
9.	*Upakodana* (CS. Vi 7 21)	Cooking (of cakes)
10	*Kledana*(SS SU 41 4)	Moistening
11	*Kṣodana* (CS Vi 7 22) *Syn. Cūrnana* (CS Vi 7 22)	Pulverisation
12	*Khandaśah chedana* (CS. Vi. 7 17)	Cutting into pieces
13.	*Jarjarīkaraṇa* (CS Ci. 1 2.14, 26 244)	Disintegration

14.	*Tāpana* (SS. SU. 415)	Heating
15.	*Dahana* (SS SU 11 11)	Burning
16	*Dhupana* (CS Ci 15.163)	Fumigation
17	*Nirvāpana* (CS. Vi. 7 25)	Dipping in liquid
18.	*Niṣkulīkarana* (CS. Ci. 1.1 66)	Elimination of seeds
19	*Niṣkvāthana*	Boiling
20	*Niṣpavana* (CS Vi. 7 25)	Winnowing
21.	*Paripavana* (CS. Vi. 7.17) *Syn. Gālana*(CS. Ci. 18 49. Vi 7 26)	Filtration
22	*paripāna* (SS. Ci. 10.3)	Soaking
23	*Parisrāvana* (SS. SU. 11 11, Ci 10 11)	Decantation
24	*Pīdana*(CS Vi. 7 21)	Compression
25.	*Peṣana* (*SS* SU. 11 11)	Grinding
26	*Puṭapāka* (*CS.* Ci. 1.175, 19 64-65,ka 12.6)	Heating in a closed vessel
27.	*Praksālana* (CS Ci 21 98)	Washing
28	*Prativāpana* (SS SU 11 11)	Addition
29	*Bharjana* (*CS* Ci. 2.1.49, 14 122, 125)	Roasting
30.	*Bhāvanā* (*CS* Vi 7 22)	Impregnation
31	*Manthana* (*SS.* SU. 45 78)	Churning
32	*Rasagrahana* (CS Vi 7 21)	Extraction
33	*Vipacana* (*SS* SU 11 11)	Cooking
34	*Śodhana* (*CS.* Vi 7 25)	Purification
35	*Śoṣana (SS. SU. 11 3, 41 6, Ci 10 3)* *Ātapaśosana* (*CS.* Vi 7 22, Ka 12 6) *Chāyāśoṣana* (Ibid. Ci 23 104, 1 1 58)	*Desiccation* Sun-drying Drying in shade
36	*Sādhana* (*CS* Vi 7 17)	Preparation
37	*Svedana* (*SS* Ci 27.6)	Steaming

Apparatus and Appliances

As the subject is very vast and scattered althrough the Samhitās, it is difficult to give the complete list However, the common appliances and accessories are enumerated below

1	*Angāracullī* (SS Ci 5 18)	Furnace
2	*Ayahsthālī* (CS Ci 1 33)	Iron plate
3	*Ayoguda* (CS Ci 18 148) *Syn Ayahpiṇda* (SS Ci 10 12)	Iron ball
4	*Ayomaya Kumbha* (SS Ci 10 13)	Iron Jar
5	*Āyasa Bhānda* (CS Ci 7 75)	Iron vessel
6	*Āyasa pātra* (SS Ci. 10 12)	Iron plate (big)
7	*Āyasī pātrī* (CS Ci 1 3 3)	Iron dish
8	*Ācamanīya* (CS Su 15 7)	Water pot
9	*Udakumbha* (CS Vi 8 9, Sa 8-46)	Water Jar
10	*Udakoṣtha* (CS SU 15 7)	Water-reservoir
11	*Udūkhala* (CS SU 15 6, SS Ci 4 30)	Mortar

12.	*Kaṭa* (CS. SU 15 7, Vi 7 22)	Mat
	Syn. kilinjaka (SS Ci. 10.4)	
13.	*Kalasa* (CS. Vi. 7.22)	Pitcher
	Syn.-ghaṭa	
14	*Kumbha* (CS. SU 15.7)	Jar
15.	*Kuśahastaka* (CS SU 15 7)	Broom
	Kūrcaṇa (CS. Ci. 1 1.46)	Grinder
16.	*Khaja* (CS. SU. 15.7)	Churning stick
	Syn. Manthāna (CS. SU 11.)	
17.	*Ghṛtabhājana* (SS. Ci 5.14, 15)	Ghee container
	Syn *Snehaghaṭa* (SS Ci. 4 30)	
18.	*Tāmrabhājana* (CS. Ci. 26, 248)	Copper vessel
19.	*Tulā* (CS. SU 15.7)	Weighing scale
20.	*Darvī* (CS. SU. 15.7, SS. SU. 11 11)	Laddle
21.	*Dṛṣad sapindhāna* (CS. SU. 15 7)	Stone slab with pestle
22.	*Droṇī*(CS. Vi. 7.25, SS. Ci 10.12)	Tub
23.	*Paripacana* (CS SU. 15.7)	Cooking utensil
24.	*Paryoga* (CS. SU. 15.7)	Boiling pan
	Syn. *Kaṭāha* (SS. Ci 4.28, 29)	
25.	*Pātra* (*CS*. Vi. 6.13)	Big plate
26.	*Pātrī* (*CS*. SU 15.7)	Dish
27.	*Piṭhara* (*CS* SU 15 7)	Cooking vessel
28.	*Piṣṭapacana* (SS Ci 27 8)	Cooking pan
	Syn piṣṭasvedana (CS. Ci. 1.2.14)	
29.	*Mānabhāṇḍa* (CS SU. 15.7)	Measuring vat
30.	*Muśala* (*CS. SU.* 15 6)	Pestle
31.	*Śarāva* (CS. SU. 15.7)	Platter
32.	*Śilāśmabhāṇḍa* (CS Ci 26 258)	Stony Jar
33.	*Śūrpa* (CS In. 12.19)	Winnowing basket
34.	*Saraka* (*SS*. Ci 4 28)	Bowl, cup
35.	*Sthālī* (*CS*. Vi 7.17)	Cooking vessel
36	*Hasantikā* (CS. SU 14 54)	Small furnace

Weights and Measures

In pharmacy, weights and measures are important considerations as everything has to be used in prescribed quantity and for that proper and accurate weighing is necessary In list of apparatus above, there are mentioned *tulā* as well as *mānabhāṇḍa* which indicate that determination of quantity was made in both ways e g. by weighing as well as by measuring the volume The latter method is still prevalent in tribal areas, this shows that this was the primitive method but as there were chances of variations in the volume of measuring vats, the necessity for accurate weighing was felt Even in units of weight, the words like *añjali*, *musti*, *droṇa*, etc , which are remnants of this, support the above idea

Caraka gives the following table of weights —

6 *dhvamsī* = 1 *marīci*
6 *marīci* = 1 *sarsapa*
8 *sarsapa* = 1 *rakta sarṣapa*
2 *rakta sarṣapa* = 1 *tandula*
2 *tandula* = 1 yava
4 *yava* = 1 *aṇdikā*
4 *andikā* = 1 *māsaka*
3 *māṣaka* = 1 *śāṇa*
2 *śāna* = 1 *drańksaṇa* (kola)
2 *dranksana* = 1 *karsa*
2 *karsa* = 1 *palārdhe* (śukti)
2 *palārdha* = 1 *pala*
2 *pala* = 1 *prasrta*
2 *prasṛta* = 1 *kudava*
4 *kudava* = 1 *prastha*
1 *prastha* = 1 *ādhaka*
4 *ādhaka* = 1 *drona*
2 *drona* = 1 *śūrpa*
2 *śūrpa* = 1 *goṇī*
32 *śūrpa* = 1 *vāha*
100 *pala* = 1 *tulā* [90]

Suśruta, in the context of the preparation of *sneha* (*taila-ghṛta*), described the units of weight as follows:

12 *dhānyamāṣa* = 1 *suvarnamāṣaka*
(medium)
16 *suvarṇamāṣaka* = 1 *suvarṇa* (*karṣa*)
or
19 *niṣpāva* = 1 *dharaṇa*
(medium)
2½ *dharaṇa* = 1 *karṣa*
4 *karṣa* = 1 *pala*
4 *pala* = 1 *kudava*
4 *kuḍava* = 1 *prastha*
4 *prastha* = 1 *ādhaka*
4 *āḍhaka* = 1 *droṇa*
100 *paḷa* = 1 *tulā*
20 *tulā* = 1 *bhāra* [91]

Vāgbhaṭa in AH gives a ready formula for calculation of these weights as follows : *śāṇa* , *karṣa* , *pala* , *kudava* , *prastha* , *āḍhaka* , *droṇa* , and vāha are four times successively[92].

In *AS* , Vāgbhata follows Caraka but with slight modification as follows

6 *vamśī* = 1 *marīci*
6 *marīci* = 1 *sarṣapa*
8 *sarṣapa* = 1 *taṇḍula*
2 *tandula* = 1 *dhānyamāsa*
2 *dhānyamāṣa* = 1 *yava*

Thereafter *andikā* , *māsaka* , *śāna* , *karsa* , *pala* , *kudava* , *prastha* , *ādhaka* , *drona* and *vāha* are four times successively.[93] Accordingly *sāṇa* is of four *māsakas* but Caraka takes it as of three ones.

There were two traditions of weights— *māgadha* and *kālinga* prevalent in *Magadha* and Kalinga regions respectively, of these two, the former was taken as superior (may be due to political reasons) According to Dalhana, Suśruta, in this respect, follows the *māgadha* while Caraka follows the *kālinga māna*[94] It is said that Nandas of Magadha empire established the system of weights and measures[95].

Bheṣajāgāra (Drug-Store)

Caraka has given a good description of the drug-store He says "After collection the drug should be kept in suitable and good containers and stored in a room facing eastward or northward, deviod of wind but well ventilated, daily ritualised with offering of flower etc , holding them up in a swing or rope well covered and making them unapproachable for fire, water, humidity, smoke, dust, rats and quadrupeds [96]

Suśruta says that drug-store should be located in clean surrounding and auspicious direction and the drug should be placed in cloth bag, earthen jars, wooden planks and hooks.[97]

There is no mention of separate manufacturing unit but as the physician himself was also acting as pharmacist, he used to prepare medicines in a portion of his own house which also had his clinic in a separate portion In hospitals (*āturālayas*), as described in *CS*[98], there must be a section of pharmacy where medicines were prepard In case of kings and landlords, the physician arranged to prepare medicines there itself as is evident from the description found in the context of the illness of king Prabhākarvardhana, the father of Harṣavardhana The premises were filled with aroma of decoctions, ghrtas and tailas being prepared there[99]

Collection of Plants

To prepare drug those plants should be collected which are grown in time (proper season), mature with taste, potency and aroma, unaffected by time, sun, fire, water, air and insects and are fresh Their twigs and leaves newly grown should be taken in rainy and spring seasons, roots in summer or late winter when the leaves have fallen down or are fully mature, bark, tubers and latex in autumn, heartwood in early winter and flowers and fruits according to season [100]

Suśruta, however, differs and says that — *saumya* (śītavīrya) plants should be collected in saumya seasons (rains, early and late winter) while the *āgneya* (*uṣṇavīrya*) ones in *āgneya* season (autumn, spring and summer). Further he emphasises on the soil composition and recommends that emetics should be taken from the soil having agni, *ākāsā* and *vāyu* predominantly while purgatives from that with predominance of prithivī and ap. Concluding he says that any drug, new or old, should be taken only on the criteria that it should not be abnormal in smell and deteriorated in Rasa etc.[101] Describing an ideal drug again he says that it should have grown in good place and have been collected in auspicious time, is agreeable, endowed with proper smell, colour, taste etc. and when administered in proper dose destroys the disorder but does not produce any harmful effect.[102]

Vāgbhaṭa adds that the plant should not have been suppressed by other bigger plants and should have deep and big roots [103]

Nomenclature of Formulations

Apart from single drugs, a majority of compound formulations are used in Indian Medicine These are named on different principles as follows

1. As a rule, the formulation is named after the main drug.[104] For instance, *citrakādi guḍikā* where *citraka* is the main drug
2. The formulations is named after the disease in which it is indicated such as *śūlavajrinī, gulmakālānala* etc
3. On the basis of properties and actions such as *bṛmhaṇī guṭika*
4. On the name of the sage who has invented it such as *kānkāyana vatī*
5. On the name of the patient such as *cyavanaprāśa*
6. On the name of god or goddess — such as *nārāyanataila, tārāmandūra*
7. On the basis of glorification such as *yogarāja*
8. On the basis of the colour such as *pītaka cūrna.*
9. On the basis of the time of preparation such as *pusyānuga cūrna*
10. On the basis of the number of ingredients such as *navāyasa*
11. On the basis of quantity of ingredients such as *satpala ghrta*
12. On the basis of the substance having the highest quantity such as *sitopalādi leha.*
13. On the basis of symbolical representation such as *kanakabindvarista*

14. On the basis of the first drug such as *viḍangādya lauha*

Compound formulation generally consists of the following components

1. Main drug
2. Adjuvants or synergistics
3. Corrective or balancing
4. Vehicle.

For example, *sitopaladi cūrna* contains *Pippalī* as the main drug, *elā* and *tvak* as adjuvants, *vaṃśalocana* as the balancing drug and sugarcandy as vehicle.

These formulations are generally prescribed to be taken with some *anupāna* *'anu'* here means both *'with'* and *'after'* Thus honey etc and water etc come under this category

Drug formulations also have rise and fall like empires by the course of time Some formulations like cyavanaprāśa are lucky to have long life while other like samatritaya quite popular once is obsolete now. Others, however, like newcomerse were introduced in medieval period

Impact on Literature

By the beginning of the Christian era or even earlier, the art and science of pharmacy in India was fully established. A large variety of preparations were in use by the physician Thus for practical convenience, several texts of medicine had their subject matter arranged according to the pharmaceutical forms The *Nāvanītaka* under the *Bower MSS* has the same arrangement Later on *Candraṭa*, *Soḍhala*, *Vopadeva*, *Śārngadhara* and *Harsakīrti* followed the same pattern

Looking to the importance of the subject, vāgbhata devoted a separate chapter (*Bheṣajakalpādhyaya*) on this in *Kalpasthāna*

Rasaśāstra

The history of pharmacy in India can not be regarded as complete without touching upon the area of *Rasaśāstra* Some have transisted is as 'Hindu Alchemy'[105] while others as 'iatro-chemistry'[106] but, in fact, no such words can denote the real meaning and purport of Rasaśāstra Al-Biruni did not tire in speaking ill of alchemy prevalent in India which flourished at the cost of ignorance of the people[107] but it is not the whole and real picture of the situation.'*Rasaśāstra*' can be defined as 'the science dealing with *Rasa* (mercury) and its processing' Mercury is the symbol of Lord Śiva who plays in the arena with his consort sulphur which is regarded as rajas of the goddess Pārvatī[108]. There are other substances which subserve in these processings which are grouped as *mahārasa*, *uparasa* and *sādhāraṇa rasa*[109]. Metals also are dealt with because they are closely connected with mercury-sulphur in their processings. Lastly,

poisons also take part in it because it was Lord Śiva who acepted and received poison when it emerged from the ocean

Rasaśāstra had two distinct aspects — *lohavedha* and *dehavedha*[110] The former dealt with transmutation of base metals into gold (alchemy) while the latter deals with the human body with the object to provide it stability[111] This science originated in the circle of *tāntrikas* but later on adopted by physicians. one of the sections of *Tāntrikas* applied it as alchemy In medicine too, initial,y it was restricted to Rasāyana purpose with the object of making the body (*piṇḍa*) stable (*Sthira*) like *Vajra* This philosophy of '*piṇḍasthairya*' attained a popular form which was described later by Mādhava in his sarvadarśasaṅgraha as '*Raseśvaradarśana*' '*Rasa-Rasāyana*, was one of the eight siddhis in Buddhist tantra[112].

There are eighteen *samskāras* (processings) of mercury The main processings are śodhana (purification) and *mārana* (killing) as without them the metals and minerals can't be assimilated in the body. For these purposes, many instruments (yantras) and apparatus were invented.

Though *pārada* is mentioned in *SS*[113] and AH[114] for external application and in AS once for internal use[115]. The actual growth of *Rasaśāstra* begins in 7th cent A D when *Vajrayāna* was established and culminates in 13th cen A D Among the texts of *Rasaśāstra* under the period, only two *Rasahrdayatantra* of govinda and *Rasārṇava* are worthy of mention. These also formed the basis of mercurial philosophy

As precursor of *Rasaśāstra*, *Lohaśāstra* emerged and developed under the patronaga of Nāgārjuna[116] and Patañjali which probably resisted the advent and development of *Rasaśāstra*[117] which practically engulfed it but till then it continued simultaneously.

In conclusion, it can be said Pharmacy in India was established on rational basis long before Buddha was born (6th cent B C)[118] which is evident from its clear and exhaustive description in ancient Āyurvedic samhitās composed at about 1000 B C It was the period when most of the countries in the world were just awakening[119]

References and Notes

1 The term '*dantodūkhalika*' (using teeth as mortar) is used for this in later literature (See Bhag 11 18 5)
2. Sharma T N · *Āsāvaristom Kā Mānakīkarana* (Ph D Thesis), B H.U , 1973
3 Sāyana's comm on RV 1 32.3, 2 11 17, 15 1, .22 1, 10.14 16 (*Trikadrukeṣu Jyotirgaurāyurityetannāmakesu abhiplavikeṣvahahsu*), and on AVS 2 5 7
4 *AVS* 6.109 etc.
5. *KSS* Chapter on '*Bhaisajyāni*' particularly 25 16 (*varti*), 18 (*phānta* also 28 14, 30.98), 26.1(*taila-ghṛtapāna*), 8 (*ghrtanasya*), 18 (*haridraudana*) 25 (*kāvātha*),29 (*cūrṇa*, also 28.9); 27 10 (*mantha*, also 28 3, 16), 29.15, 31 17 (*kṣodana*), 19 (*dhūpana*) etc.

6 *CS* Ka 1 3 (*Vividhaih kalpanārtham*).

7 *Bahutā* (abundance), *Yogyatā* (effectivity), *anekavidhakalpanā* (having vatious preparations) and *sampat* (excellence in qualities and active essence) — These are the four qualities of drug(*CS. SU* 9 7).'*Bahutā*' is converted as '*Bahuguṇam*' by Vāgbhata (*AH. SU* 1.28)

8 *SS. Ka.*

9 *KS. Ka.*

10. *CS. SU.* 4 7 Suśruta mentions six preparations adding one *kṣīra* (SS. SU. 44 91) In one reading there is *cūrna* instead of phānta Dalhana comments that *Kasāya* is of two types-śrta (cooked) and śīta (uncooked). KS. added two — *cūrna* and *abhisava* and made it seven (KS. khil. 3 35)

11 *Kalpanam upayogārtham prakalpanam samskaraṇam iti yāvat* — Cakra on above and 1-3

12 *Tena dravyāpeksīni ityetadapi boddhavyam* — Cakra on above

13 '*Niryāse*' *pi kasāyo* '*strī*' — Amara 3 3 153. Ḍalhana on SS Ka. 5 46 (*kasāyo'tra niryāsah*).

14 *CS SU* 4 6 Cakra takes here '*kasāya*' meaning' drug (see his comm on Ibid. 1-3 (*Kasāyaśabdena auṣadhadravyam ucyate*)

15. *Śaktiviśesa-kalpanārthaṃ ca kalpanā kriyate*-Cakra on CS. SU 4 6

16. *Śrtaśītaphāntakasāyāstu dravyasya kārtsnyenānupayojyasya tattat samskāravaśād dravesu dravyasya stokāvayavānupraveśārtham upadisyante* — Ibid

17 *Bhalavati puruse vyādhau ca dravyasārabhāgamayatvenātyarthaṃ gururbahukāryakarah svaraso yujyate.* . Ibid on CS SU 4.7

18 *Kecit svarasadvisah, kecit svarasapriyāh'* — Ibid

19 SS SU 34 22-23

20 SS 4 40 81-88 *CS* prescribes extraction of juice by **heating** in ***pātālayantra*** **(a** type of closed heating)-see *CS*. Ka 1 20) also SS Ci. 4.30-31, ***Puṭapāka*** **was** also commonly used in eye disorders (*SS* U 18.20-21)

21 *CS Ci* 1 1 75, 19 64-65, Ka 12 6

22 *CS SU* 3 16 (*Palāśanirdāharasa*) Cakra explains the Method as'*Palāśasya pradhānamūle chinne' dhah kumbham datvā upari vrkṣādadhah' yo galati svarasaḥ sa grhyate*' The word '*Nirdāha*' may be analysed as '*nirgamanāya dāhah nirdāhah* Also SS Ci 10 13

23 *Cūrṇam kalke eva antarbhāvanīyam Dvividho hi kalkah-sadravo*' dravaśca iti krtvā -Cakra on CS SU 4 7

24 See under Svarasa

25 *CS Ci* 21 98

26 Ibid. Ci 4 97-98

27 AS SU 29 8(*Nāsayā pranīyamānah kalko* '***vapīḍasaṃjñaḥ,... Kalkīkṛtād*** *ausadhāt avapīdītah sruto raso' vapida ityapareṣām*). **Cakra belongs to the** latter group as he says-'*Avapidaśca dravyam āpothitaṃ krtvā pīḍayitvā raso dīyate yah sa ucyate*' (CS Ci. **4.97-101**). **So does Ḍalhana** (*Śrtaśita-svarasādīnām picunā 'vapīdanāt* ***avapīḍaḥ-SS.*** **Ci. 40.21**).

28 In *SS* (Ci 14 11), there is one '*mūtravarti*' **(*varti* prepared in urine) used** internally in *Udararoga* Dalhana says it ***ābhyantarī mūtravarti***'.

29. *CS SU* 5.106. '*Vartıkrıyā*' ıa an edıble preparatıon (see Ibid. Vı. 8.135', Ka 1 24 and Cakra's comm Thereon.)
30. Ibıd. Cı. 7 92 Also '*aṅgarāga*' (SS. Cı. 25.43)
31 *CS Ka.* 12 47; also 12.16. Suśruta calls ıt *cūrṇakrıyā*' (*SS.* Ci. 10.10) but it is wıder and ıncludes ımpregnatıon wıth juıce of other plants as well. Nowadays '*āmalakī-rasāyana*' ıs prepared by the same method.
32 Ibıd. SU. 3 6.
33. Ibıd SU 3.11, 21 96-97 (also known as '*Vraṇa-cūrṇa*).
34. Ibıd. Ci 7.92
35 *SS.* Cı 24.52-53
36 Dalhaṇa on the above
37 *CS. Cı.* 7 104
38 The quantıty varyıng accordıng to nature and consistency of drug. In case of dry and hard drugs ıt ıs more whıle in that of fresh and soft one ıt ıs less. Normally for soft, medıum and hard drugs ıt ıs 4,8 and 16 times respectıvely. Similarly, it also depends on quantıty of the drug. If the drug ıs 10-40 gms, water is gıven 16 tımes, in 41-60 gm ıt ıs 8 times whıle in drugs 161 gms. and above, water is gıven 4 times.
39 *Pramathyāśabdo hı vṛddhaparamparayā pācanadīpanakaṣāye Vaıdyakaśāstre parıbhāṣıtah śrūyate'* — Cakra on CS 19.19.
40 *CS. CI.* 2 2 18-20.
41 Ibıd Ka 1 17-18
42 Ibıd Ka 7 33
43 Ibıd Vi 8.135, Ka 1 23, SS. Ci 10 9 (*Nātidravaṃ Nātısāndram*).
44 *CS. Cı* 14 190 Its character ıs '*sāndra*' and '*darvīpralepana*' e.g it ıs known as prepared when ıt stıcks to the laddle. It ıs solıdıfied (CS. Cı 26 195) and thus dıffers slıghtly from '*leha.* Later on ıt became synonymous wıth leha (*Śārngadhara* 2 8.1)
45 Also SS Ci 6 13; 9.10; U. 40 90 (*phāṇıtmıva phāṇıtam styānamadhvākṛtı* — Ḍalhaṇa)
46 *CS.* Ka. 7 36-38, 50-51
47. Ibıd Ka 7 52-55
48 Ibıd 7 28
49 Ibıd Cı. 16 75 (*Udumbarasamān kṛtvā vatakān*), 104 (*karṣasamāh guḍāḥ*), 18 105, Ka. 7 42-43 (*Badarodumbaropamān guḍān*)
50 Ibıd. Ka 7.53.
51 Ibıd Cı. 2 1 32, 8.148, Ka 7 47, 3.9.
52 Śārngadhara II 10 2
53 Abhayārıṣta (CS Cı 14 138-43) ıs boıled while Dhātryarıṣta (Ibıd Cı. 16 111-13) ıs prepared wıthout boılıng In *āsavas*, Madhvāsava (Ibıd Ci. 6 41-44) is boıled whıle *Pıṇḍāsava* (Ibıd Cı. 15 160-62) ıs not.
54 *SS* SU 45 197; also Ci 11.5 U 46.20
55 *SS* Cı. 10 8, also 6.21. See Dalhaṇa's comm on preparatıon of *surā* (Ibıd SU. 43 4)
56 *CS* Cı 17 106, ka 2 8-9, 4 7, 6 5, also see *rasona-surā* ın Cakradatta. 25 71-73

57. *CS.* Ka 12 102-103, *SS* Ci 31 6-13
58 Ibid Ci 25 76
59 *'Snehasyātra samhitāvasthitatvāt madhuśarkarāvat 'snehaśarkarā' iti vyapadeśah'*-Cakra on the above
60 *SS* Ci 5 7, 31.6, 8-13, *CS* 7 26
61 CS Ci 11 50-77
62 *Śītah śarvarīmusito matah*-Cakra on *CS* Su 4 7 *'niśi sthitā* vā—CS Ci 4.77
63 Cakra op cit
64 CS. Ci 19 99-100
65 CS. Ci 21 81
66 Ibid Ci 13 73 SS Ci 6 21, 10 11
67 Ibid Ci 1 3 15-23, SS Ci 10 11.
68 *SS. Ci 1 102, 4 29, Ka 6 1*
69 *SS. Ci 1 101, 9.17, 24 See also Dalhana or Ibid 9 17*
70 *The detailed description of the preparation of Ksāra* is given in SS SU 11
71 *SS.* SU 34 22-23(*Manaskānta*)
72 *CS* Ka 1, SS SU 44 90 Ten forms of *bhallātaka* are proposed (CS Ci 1 2 16).
73 *CS* Ka 1 19 **Drug** was administered to Lord Buddha in this way for purgation (See MV VIII. I 30-31)
74 *Upanāha* (poultices—SS SU 17 17) *Vranalepa* (SS SU 18), *Vranavarti* (Ibid 37 13-14, 23), *Vranadhūpana* (Ibid 21) etc *Dhūpana* (Fumigation or incense) was an important pharmaceutical procedure used mostly as purifying and antiseptic measure *Kaśyapa* has described several formulations in a separate chapter (*Dhūpakalpa*)
75. Such as *kavala* and *gandūsa* (gargle) *mukhadhāvana* (mouthwash), *pratisārana* (throat-paint) *āścyotana* (eye drops), *añjana* (collyrium), *karnapūrana* (ear drops) and various *nasyas* (snuffs) etc (see SS CI 34, U 9,21)
76 See *CS Siddhisthāna*
77 *CS SU* 26 65 (*Vīryam tu kriyate yena yā kriyā)*
78 *Caturgunam jalam tatra vīryādhānāya dāpayet* Q in NK
79 *Na muñcati rasam dravyam ksīrādibhirupaskrtam Samyak pāko na jāyeta tasmattoyam caturgunam* Q. in NK (CD 1 252-53)
80 '*Rasa*' here denotes '*Vīrya*' See *Amara* 3 3 227 (Śrngārādau vise vīrye gune rāge drave rasah)
81 *Svarasasya cāturgunyam vīryasankrāntinimittam sphotayati* — NK (CD. 48 124-30)
82 *Vrddhāstu dvaigunyamatrecchanti, nihśesavīryādhānārtham* — Ibid 12 24-29
83 *Jñātvā gatarasānyetānyausadhānyatha tam rasam taccāmalakamuddhrtya* — C Ci 1 1 66, Also see Vi 7 17
84 Cakra on CS Ci 1 1 66
Ray and Gupta have misunderstood the word'*gatarasa*' and as such have interpreted it as '*evaporated residue*' (Ray and Gupta *Carakasamhita (A Scientific Synopsis*), NISI, New Delhi, 1965)

85 *Daśavāraṃ paktavyam, adhikavīryotkarsārtham*— NK (CD 22 33-34)
86 SS SU. 18 4
87 Ibid 18.15
88 *Vīryam śaktih, sā ca prthivyādīnam bhūtānām yah sārabhāgastadatiśayarūpā bodhyā* — Śivadāsa Sena (on Cakra's *Dravyaguna* 1 8)
89 CS Ka 12 47-48
90 CS Ka 12 87-97
91 SS Ci 31.7
92 AH Ka 6 22
93 AS. Ka 8 25
94. Ḍalhana on SS. Ci 31 7
95 *Nandopakramāni mānāni-Kāśikā* 2 4 20, 6 2 14
96 CS Ka. 1 11
97 *SS* SU. 36 17
98 *CS* SU 15
99 Bānabhatta *Harṣacarita*, p 266
100. *CS* Ka 1 10
101 *SS* SU 36 5, 6, 15
102. Ibid SU 34. 22-23
103. AH Ka. 6 2-4
104. CS Ka 12. 43.
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113 SS Ci 25 37-41
114 AH U 13 36
115 AS U 50 245
116 The *Lohaśāstra* of Nāgārjuna is quoted in CD (Rasayanādhikāra, 34-125).
117 Sureśvara in his lohasarvasva (5) puts one reason '*laghupakitayā*' (due to lightness in digestion), in addition to the three advanced by mercuricalist, in favour of *Lohaśāstra* His statement runs thus — "*Svādutvāt svalpamātratvāt laghupākitayā*' pi ca Atyugrataravīryatvāt *lohameva praśasyat*' Thus he wants to emphasise that *Loha* is *Laghupāki* (while pārada and its products are *gurupākī*) and as such Loha alone (eva) is recommended
118 Mahāvagga in book VI (on medicaments) contains information on various pharmaceutical forms and instruments
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11.4

PREVENTIVE AND SOCIAL MEDICINE

R H SINGH

A long healthy life has been the cherished wish of man since antiqutiy. One finds a number of contexts exhibiting this instinct in Vedic literature along with description of preventive and promotive mesures for preservation of good health and long life.[1,2] The same ideas appear to flourish further in the texts of Āyurveda [3-6] Āyurveda is not only a system of medicine but is a comperehensive science of life As such it is not concerned only to the cure of diseases but also aims to relieve the humanity from all categories of miseries-physical, mental, intellectual and spiritual Āyurveda comprehends two main streams of cikitsa, (1) *Naiṣthikī cikitsā,* (2) *Laukikī cikitsā* in order to achieve moksa and svāsthya respectively As would be discussed later, *Mokṣa* is the most superior quality of Svāsthya e g spiritual liberation An elaborate description of the means and measures needed to procure *Svāsthya* and *Moksa* are described in Āyurvedic texts, which may be studied further to evolve a science of positive health applicable in present times [7-10]

The Eṣaṇas and The Puruṣārthas

Āyurveda refers to three principal instincts or *Esanās* of man namely *Prānaisanā* (longing for life), *Dhanaisanās* (longing for wealth), *Paralokaisanā* (longing for liberation)[11] It has been emphasised that the purpose of Āyurveda is to afford *Ārogya* which is considered the very basis of *Purusārthacatustaya* viz *Dharma*, *Artha*, *Kāma* and *Moksa* [12] The man is born on this earth only to achieve these four objectives There is no other end of life Thus the Science of Life as conceived in Āyurveda is based on very high ideals

The Saḍdhātvātmaka Puruṣa and The Loka

Āyurveda considers the individual (*Purusa*) and the Universe (*Loka*) as equally *Saddhātvātamaka* entities comprising of the *Pañcamahābhūtas* and the *Avyakta Brahman* The entire philosophy of medicine and its applied aspects with regard to health and disease swing around the *Saddhātus*.[13] The applied concepts of *Tridoṣa, Triguna, Saptadhātu, Trayodasa Agni, Asaṁkhya Srotas* and the *Avayava-Sārīra* are the subsequent developments in terms of phycho-biological applications of the concept of *Saddhātvātamaka Purusa* for the sake of easy understanding in the field of biology and medicine

The Four-Dimensional Āyus

According to *Āyurveda*, '*Āyus*' is a four-dimensional entity It is comprised of *śarīra, Indriya, Sattva* and *Ātmā* — "*Śarīrendriya-satvātma-samyogo dhāri jīvitam*"[14]

Thus the *Jīva* as considered in Āyurveda is much more comprehensive than that understood in modern times The *Jīva* is not only a living body but has also a comprehensive mental and sensorial apparatus charged with consciousness by the *Ātmā* The *Ātmā* itself is the reflection of the cosmic consciousness described as Brahman The modern Science till recently considered life as a mere Anatomico-physiological entity It is very recently that the Westerners have recognised the significance of Psyche But they have not yet been able to understand the entity of spirit or consciousness independent of body and mind Thus Āyurveda stands even today a step above The man conceived as a triune of physical, mental and spiritual factors is the subject matter of Āyurveda.

The Concepts of Sukhāyus And Hitāyus

The so decribed *Āyus* has been considered both in terms of an individual and his environment with regard to their qualities It is interesting to study the concepts of *sukhāyus-duhkhāyus* and *hitāyus-ahitāyus* Āyurveda lays great emphasis on social well-being and environmental impact It is not an individualistic science It has made lot of social and environmental considerations A man who is individually happy and healthy is *sukhāyus* in contrast to another individual who is individually unhealthy and unhappy who is considered a *duḥkhāyu* On the other hand, an individual whose life is beneficial to the well-being of the society as a whole is considered *hitāyus* and the reverse is *ahitāyus* Thus Āyurveda puts equal emphasis on social well-being and social health [14]

There are two objects of Āyurveda — one, to preserve the health of the healthy (Preventive) and alleviation of disorders in the diseased (Cure) (CS SU 11 9) Here the preventive medicine gets the first position which indicates the priority of ancients Suśruta has named the concerned chapter (Ci 24) as '*anāgatabādhāpratisedha*' (prevention of future illness)

The Definition of Health i.e., Svāsthya

Āyurveda describes health as *Svāsthya* which is a state of physical, sensorial, mental and spiritual equipoising Suśruta states that a man is *svāstha* whose *dosas, agnis, dhātus and malas* are in the state of *sāmya i e , balance or normalcy (Samadosah samāgniśca samadhātumalakriyah)* and who is mentally, sensorially and spiritually in the state of calmness (*Prasannātmendriyamanāh*) i e , bliss and happiness This definition essentially touches the state of health in terms of all the four aspects of *Āyus* i e , 'Śarīrendriyasatvātma-svāsthya'[15] The reverse of this state is considered as illness

The Risk Factors In Health

The measures of preservation of health have been described both in terms of the individual and the environment As regards the individual factors to be considered in this context, emphasis is laid on *Prakrti, Sāttva, Vayas, Bala, Agni, Ojas* etc Depending upon the relative preponderance of *dosas*, the individuals may belong to different genetically determined *dosaprakrtis* namely *Vātaja, Pittaja, Kaphaja* etc similarly the man belongs to one of the *mānasa-prakrtis* like *Sāttvika, Rājasa* and *Tāmasa* Moreover, a number of variants in terms of several other factors in individual being may be identified In order to keep healthy the individual has to adopt appropriate measures and life styles in consideration of the above mentioned individual factors Similarly the impact of environmental factors such as *deśa, kāla, vāyu, udaka* etc. have been emphasised There is vivid description of the chronobiological effects of different seasons which have been described in terms of the *Tridoṣa theory* of Āyurveda Simultaneously appropriate measures in terms of diet and life style have been advocated to combat the untoward effects of the environmental factors The following tables describe in brief the seasonal variations in biological system (See Table 1 & Fig)

As also pointed out by Zimmermann (1975), the Āyurvedic texts set forth two different cycles of seasons. The one which includes the Dewy season is of distributive type. Every season has specific qualities antagonistic to the other one This provides the physician with a logical scheme according to which he may prescribe medicines compensating for an adverse excess The other one which includes the first rains is of

Table 1: The Seasonal Rhythms of Doṣas

	RTU	*VĀTA*	*PITTA*	*KAPHA*
1	*Śiśira* (Winter)	—	—	*Sañcaya*
2	*Vasanta* (Spring)	—	—	*Prakopa*
3	*Grīsma* (Summer)	*Sañcaya*	—	*Praśama*
4	*Varsā* (Rainy)	*Prakopa*	*Sañcaya*	—
5	Śarad (Autumn)	Praśma	Prakopa	—
6	*Hemanta* (Early Winter)	—	*Praśama*	

evaluative type To the only three seasons effective in India — Winter, Summer, Rains, each one aggravating a specific dosa — *Kapha*, *Vāta*, *Pitta*, three other ones are added which represent transitional phases constituting the *Saḍṛtus*. The medical treatment adopts itself to the course of time, improving the transient seasons — spring, first rains, autumn — which are the ones fit for the major treatments in hospitals. The course of time logically reconstructed determines the selection and appropriateness of medical care

The Three Principal Causes Of Ill Health

Classically Āyurveda describes three major causes of illness viz (1) *Kāla-pariṇāma*, (2) *Prajñāparādha*, (3) *Asātmyendriyārtha-samyoga* [16] In this context, it is essential to point out that *Kāla* (time), *Buddhi* (Intellect) and *Indriyārtha* (Sense-object) are the three basic factors which govern the sequence of aetiological events for health and disease. *Samayoga* of *Kāla*, *Buddhi* and, *Indriyārtha* is conducive to health On the contrary, *Ayoga*, *Atiyoga* and *Mithyāyoga* of *Kāla*, *Buddhi* and *Indryārtha* lead to disease [17] *Kāla* refers to diurnal, seasonal and climatic variations and the biological clock responsible for a wide spectrum of psycho-biological changes occurring in the living organism as response to time factor. Such changes have been receiving lot of scientific attention in the field of chrono-biology in recent years It is in view of such significance that *Kāla* (time) has been given great importance in Āyurveda granting it the status of a god-'*Kālo hi Bhagvan*' Similarly the intellect or *Buddhi* of an individual itself is an important factor which may be responsible for health and disease to a great extent *Ayoga*, *Atiyoga, Mithyāyoga* of *Buddhi* is considered to be *Prajanāparādha*, the great and primary cause of illness It is commonly observed that when an individual because of his personality and environment, allows his *Buddhi* to be prevailed upon by his mind and ego, then he indulges in many such acts which are unconducive to health both individual and social Similarly *Ayoga*, *Atiyoga* and *Mithyāyoga* of physical objects to sensory apparatus lead to stressful perception giving risk to a variety of unwholesome events and stressful states causing disease Ayurveda describes a variety of social and preventive measures to take care of such factors in order to preserve physical, mental and spiritual health

The classical Literature On Svasthavṛtta

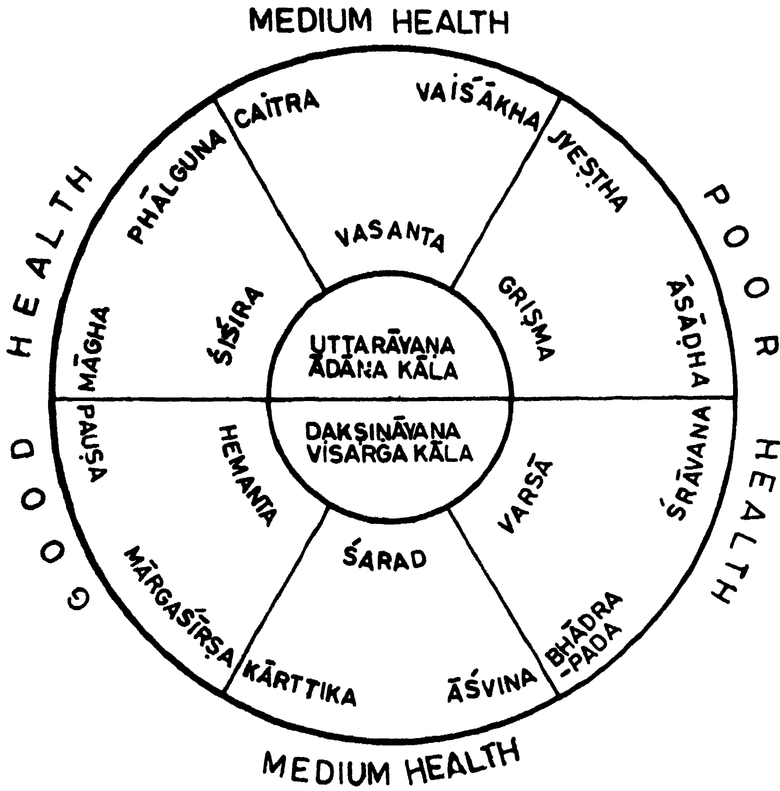
The classical literature in Āyurveda contains extensive discussion on such issue The *Svasthacatuska* chapters (CS SU 5-8) of *Caraka-samhitā* form the important basis in this context *Suśruta-Samhitā* devotes a full chapter (SS CI 24) on social and preventive medicine in its *cikitsāsthāna* Similarly, Vāgbhata describes this particular aspect of medicine in chapter 2-4 in the *sūtrasthāna* of his *Aṣṭāṅga-hrdaya* The subject has also been described in due details in subsequent literature and *Samgraha* texts A critical study of authentic literature on social and preventive medicine in Āyurveda exhibits an obvious emphasis on mental health as well Among the measures described for this purpose, the important ones are the three *Upasthambhas*, *Sadvṛtta*, *Ācāra*, *Vegavidhāraṇa* and the rules of Svasthavrtta described explicitly as *Dinacarya*, *Rātricaryā*, *Rtucaryā* etc

The Three Upastambhas

Āyurvedic classics give special emphasis on three important values which have been considered as the important conducive factors for maintenance of life and health. This important triune consists of (1) *Āhāra* (Food), (2) *Nidrā* (Sleep), (3) *Brahmacarya* (Good conduct) These three have been considered as *Upastambha* or the basis of life and health [18] The emphasis given on these factors in connection with positive health is highly relevant as it reflects the fundamental approach of Āyurveda to positive health and its totality with extended emphasis on mental health. The significance of *āhāra* [19]-'*āhāra-sambhavaṁ vastu rogaścāhārasambhavāḥ* (CS SU 28.45) 'The adequate growth and maintenance of the body essentially depends on an optimum and balanced diet Logically an unappropriate and unbalanced diet becomes an important cause of disease The concept of balanced diet is clearly defined in Āyurveda by the terms '*sarvagraha*' and'*parigraha*' (CS.vi 1.21(4) This has been illustrated while enumerating the items of wholesome diet (CS,CU 5 12) A *hitakara āhāra* is termed as *Pathya* and the reverse is *Apathya*. *Pathya* has been considered as equivalent to *Bheṣaja* It is the sheet anchor of treatment in *Yuktivyapāśraya cikitsā*. It may also be emphasised that the *āhāra* is integrally related with Agni-Vyāpāra It is in view of this fundamental significance of *āhāra* that Āyurveda considers it as number one item in *Upastambha-traya* —"*Traya Upastambhāḥ ityāhāraḥ, svapno, brahmacaryamiti* (CS.SU.11.35)' Āyurveda describes a large number of food and drinks, describes the method of their preparation and the code and discipline of taking the food. There are extensive descriptions available in Āyurvedic texts about cooking procedures and the rules to be observed while taking food The food has been given a godly status and is considered a subject of worship. The foods are essentially pāñcabhautika and in terms of the theory of *Sāmānya* and *Viśesa*, the items of diet have been identified as *Vātala*, *Pittala*, *Ślesmala*, *Sāttvika*, *Rājasa*, *Tāmasa* etc Their appropriate use may help in balancing the similar *Pāñcabhautika* components of the body [20]

Similarly *Nidrā* or sleep is another essential requirement for life and health Ayurveda has described in detail the mechanism of sleep and its qualities. [21] Caraka has described seven kinds of sleep namely (1) *Tamobhavā*, (2) Ślesmasamudbhavā, (3-4) Manahśarīraśrama-saṃbhavā, (5) *Āgantukī*, (6) *Vyādhianuvartinī* and (7) *Rātrisvabhāvaprabhavā*. The last one is also called *Bhūtadhātrī Nidrā* and the same, has been termed as *Vaiṣṇavī Nidrā* by Suśruta The *Nidrā* described in the context of *Upastambha-traya is actually the normal sleep i e., the Rātriswabhāvaprabhavā-nidrā* The remaining categories of *Nidrā* actually fall into the category of disorders of sleep Thus, a good normal sleep is an important factor needed for preservation of health Besides *āhāra* and *nidrā*, *Brahmacarya* is the third component of *Upastambha-traya Brahmacarya* means a balanced sex and worldly life. It essentially negates over-indulgence in sex and similar worldly acts The practice of *Brahmacarya* promotes life and preserves health and as such is an important promotive practice The health-promoting practices described in Āyurveda may be broadly classified into two categories (1) *Sadvrtta*, (2) *Svasthavrtta*. In spite of bilateral overlapping *Sadvṛtta* deals primarily with mental and social health while *Svasthavṛtta* deals with bodily health and personal hygeine.

SEASONAL RHYTHMS AND HEALTH



आदावन्ते च दौर्बल्यं विसर्गादानयोर्नृणाम् ।
मध्ये मध्यबलं त्वन्ते श्रैष्ठ्यमग्रे विनिर्दिशेत् ॥
— च. सू. ६.८

Seasonal Rhythms and Health

Mental Hygiene

The practices described for mental hygiene and promotion of mental health in Āyurveda include (1) *Sadvrtta*, (2) *Ācāra-Rasāyana*, (3) *Dhāranīya-vega-vidhārana* The *Sadvrtta* schedule is described in great details in Āyurvedic classics Caraka has given a comprehensive account of the mode of healthy and happy life Suśruta considers a man healthy only when he is in the state of biological balance and enjoys sensorial, mental and spiritual happiness (SS.SU 15). Such a state of health can be achieved only by observing the rules of good conduct i e, *Sadvṛtta* It may be pointed out that the mind and the body continuously interact and influence each other under the influence of environmental factors If such an interaction is not controlled and moderated appropriately, it gives rise to pathological problems. It is with the objective of appropriating such situations that Āyurveda introduces the code of *sadvṛtta* *sadvṛtta* is similar to the idea of *yama* and *niyama* described in the context of *Yoga* Different kinds of emotions such as *kāma, krodha, lobha* etc., arise as a consequence of *mānasadoṣavaisamya* By the practice of *sadvṛtta* the *Sattva guṇa* prevails over *Rajas* and *Tamas* and thus preserves good mental health The code of *Sadvrtta* described in Āyurveda can be summarised in the following headings[22].

1. *Mānasika Sadvrtta* (Mental)
2. *Cāritrika Sadvartta* (Ethical)
3. *Sāmājika Sadvrtta* (Social)
4. *Dhārmika Sadvrtta* (Moral)
5. *Vaiyaktika Sadvṛtta* (Personal)
   - a *Sadvṛtta* of cleanliness
   - b *Sadvṛtta* of dietetics
   - c *Sadvṛtta* of study
   - d *Sadvṛtta* of exercise
   - e *Sadvṛtta* of sex
   - f Miscellaneous

Besides the context of *Sadvrtta*, the Āyurvedic texts describe the concept of *dhāranīya* and *Adhāranīya. Vegas*[23] The *Adhāranīya Vegas* essentially refer to the biological urges like urination, defaecation, ejaculation, emesis, sneezing, yawning, appetite, thirst, sleep etc which are essentially bodily urges and as such they have been advocated not to be restrained Retaining of such urges leads to a number of disorders and disease such as *Udāvarta* etc [24] On the other hand, the texts describe a number of *Dhāraṇīya Vegas* such as *sāhasa, aśasta karma, lobha, śoka, bhaya, krodha, ahamkāra, nirlajjatā, īrṣyā, rāga* and *abhidroha* All these are different kinds of vicious mental urges In the interest of social and personal health, it has been advocated that these urges must be restrained These *Dhāraniya Vegas* induce a variety of mental conflicts at the level of individual psyche causing mental ill health of the individual besides their untoward impact on the society including the family and relatives of the individual, a great risk of social health Similarly, one finds an equally comprehensive description of mental hygiene practices in the context of *Ācāra-Rasāyana*[25] where the ancients describe a schedule of good conduct to be observed by the man desirous of

Rasāyana effects leading to longevity, immunity and promotion of mental health It is claimed that the practice of *Ācāra-Rasāyana* conduct yields in an individual all benefits of *Rasāyana*, may it be biological or psychological i e , improved nutritional status, metabolic events, tissue nourishment, longevity, immunity and mental power It appears easily percievable that a peaceful happy life resulting out of good conduct will obviously be associated with a state of positive health and anabolism

Personal Hygiene

Āyurveda advocates a comprehensive regimen of life as the means to preserve normal health This routine regimen is called *Svasthavṛtta* which can be described in terms of (1)*Dinacaryā* i.e , daily routine, (2)*Rātricaryā*, (3) *Ṛtucaryā* etc [3-7]

As per *Dinacaryā* advocated by Āyurvedic texts a man should get up from the bed early in the morning before Sun-rise i e., *Brāhma Muhūrta*. He should attend to natural calls and should wash his hands and excretory orifices properly with clean water followed by mouth and dental cleaning. Mouth should be cleaned with cold pure water. The teeth should be cleaned with the help of a fresh wooden stick brush without damaging the gums. Caraka describes several kinds of dental sticks (dantadhāvana) which are to be used in consideration of the seasonal variations and *Tridoṣic* rhythms Old and sick persons should avoid wooden dental stick brushes and should clean their mouth and teeth by clean cold water After mouth wash and dental cleaning one should clean his tongue with a specially designed tongue cleaner (scraps) made up of gold, silver or wooden stick which should be on avrage ten *aṅgula* (10-15cm) long Both the eyes should be cleaned with clean cold water after mouth wash and after drying the eyes *añjana* should be applied in order to avoid eyes diseases and to promote vision *dhūma* of medicated smoke is advocated to prevent foul smell from the mouth.

Vyāyāma or physical exercise is considered an important component of *Dinacaryā* Caraka states that when moderately performed the physical exercises provide lightness in the body, physical activity, steadiness and fortitude He has emphasised that muscular activity is essential to promote physical and biological strength Every individual of either sex and all age groups should perform exercises daily considering his or her age and constitution i e , *Vayas*, *Sātmya* and *Prakrti* The exercises promote appetite and digestion and remove laziness It also produces tolerance to hunger, thirst, heat and cold and protects the man from disease Besides, Caraka has also mentioned certain contraindications of physical exercise viz , after coitus, after heavy meals, in febrile condition, in a patient of Raktapitta i e , bleeding disorders, heart disease, asthma, vertigo, pthisis etc *(CS SU* 734-45)

After exercise one should take bath with clean cold water in summer and with hot water in winter season Bath should be taken twice and attempt should be made to clean all pores of the body and the limbs The hairs, beard, and nails should be cut thrice a fortnight One should always apply oil on his head, ear, nose, and feet should comb his hairs, should apply profussion and should be meriated smoke He should keep well dressed Regular bath prevents fatigue, excessive sweating, indigestion and sleepiness

Vāgbhata contraındıcates bath ın febrıle states, cold and conjunctivities etc Bath ın mıdnıght or mıd-day after comıng from outsıde specıally ın summer ıs contraındıcated In wınters nıght bath should be avoıded Bath sould also be avoıded by persons sufferıng from respıratory dıseases

Dıet ıs another ımportant consıderatıon ın thıs context *Āhāra* or dıet has already been mentıoned ın the context of *Upastambha-traya* as ıt ıs one the prıncıpal factors whıch sustaın lıfe. Āyurvedıc texts descrıbe ın detaıl the dıet, ıts contents, preparatıons and the conduct of ıts consumptıon besıdes fundamental prıncıples ın selectıon of dıet for an ındıvıdual such as *doṣas, Agnı, deśa* (clımate), *kāla* (season and weather) and the ındıvıdual constıtutıon ı e , *agnı, deha-prakrtı* (CS Vı 1 21-25)

Rtucaryā or regımen of lıfe ın dıfferent seasons has been descrıbed ın extensıve detaıls ın all the Āyurvedıc classıcs It ıs postulated that ıf an ındıvıdual follows the prescrıbed ***Rtucaryā*** he may adqpt and overcome the stresses of seasonal varıatıons and as such may not suffer from ıll health ordınarıly produced by *Kāla-Parınāma* On the basıs of Kāla factor the whole year ıs dıvıded ın two parts vız., *Uttarāyaṇa* or *Ādānakāla* and *Daksınāyana* or *Vısargakāla* and agaın ın sıx parts (*Sadrtus*) vız , *Śıśıra, Vasanta, Grısma, Varsā, Śarad and Hemanta.* Adānakala comprıses of the former three and vısarga of the latter ones The reactıons of *Trıdosas* to the changes occurıng ın the external envıronment due to the seasonal varıatıons have been vıvıdly descrıbed ın terms of *Caya, Prakopa* and *Praśama* of *Vāta, Pıtta* and *Kapha* The ***Rtucaryā*** essentıally aıms to preserve the equılıbrıum of *Dosas* ı e , *Dosasāmya* Specıal attentıon has been paıd to *Rtusandhıs* ı e , the transıtıonal perıods between the two seasons when dıseases mostly arıse

Besıdes, the prescrıbed mode of lıfe, dıetıtıcs, and physıcal exercıse Āyurveda also advocates the approprıate use of *Rasāyana* and *Vājīkarana* remedıes as restoratıve agents for promotıon of health and preventıon of dıseases

Idea of contagıous and ınfectıous dıscases was also there It ıs saıd that *Kustha, Jvara, Śosa, Netrābhısyanda* and other such ınfectıous dısorders spread from man to man (SS Nı 5 33,34) In such cases, all possıbale contacts wıth the dıseased ones are to avoıded

If there ıs polutıon of envıronmental factors such as aır, water etc epıdemıcs occur causıng destructıon of (the people ın) the localıty (*Janapadoddhvamsa*-CS Vı 3) Suśruta has traced the orıgın of maraka (epıdemıcs) to ıngestıon of defectıve herbs (food) and water (SS SU 6 17)

To prevent such occurences aır, water, food and place have to be purıfıed In early days, purıfıcatıon of aır was effected by sacrıfıces performed partıcularly durıng confluence of seasons Fumıgatıon wıth *guggulu, nımba* leaves, *jatāmāmsī* etc destroy the mıcro-organısms causıng ınfectıons Suśruta has prescrıbed a novel method to detoxıcate the atmosphere by beatıng and blowıng the musıcal ınstruments pasted wıth antı-poısonous drugs (*SS Ka* 3 6-12, ch 6) Sımılarly, purıfıcatıon of water has been gıven due emphasıs Suśruta has descrıbed detaıled method for the same

(SS SU 45 12-20,Ka 3 9) *Āntarīksa jala* (pure rain water) and Hamsodaka (*CS.SU.*6.46.47) were ideal types of purified water The place also has to be kept neat and clean (ibid Ka 3 10-12) High emphasis of ancients on '*śauca*' (purity and cleanliness) was a great deterrent to diseases

The code of conduct (*sadvṛtta*) including fasts and religious rites prescribed by *dharmaśāstra* also played a vital role in giving religious injunction to *svasthavṛtta* and thus making it obligatory for everybody to follow and thus providing him physical health as well as mental purification.

Thus the principles of preventive and social medicine were postulated right in the Vedic period and the same flourished further to develop into a comprehensive science of practical significance in Āyurvedic classical and subsequent texts.

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11.5

PRASŪTI-TANTRA AND STRĪROGA IN ANCIENT ĀYURVEDIC CLASSICS

Km. P.V. TEWARI

Āyurveda developed in the form of *trisūtra*, *triskandha*[1] and *astānga*.[2] *Prasūti-tantra and strī-roga* a distinct speciality of today was included under *kaumāra-bhrtya*[2,3] Though the names of these eight branches do find a place in *Caraka-saṃhitā*, however, the subjects to be dealt under these are not described probably with the idea that the names themselves indicate their domain

The word '*kaumāra-bhrtya*' consists of two words i e *kaumāra* and *bhrtya* '*kaumāra*' means 'pertaining to child' (*kumārayati krīdati, kumāra krīḍāyām* or *kutsito māro asyeti*[4] or *ku* + *māra, mr* i e easily dying)[5] and '*bhrtya*, denotes the act of or person bearing also in womb, procuring, carrying, bringing, supporting, maintaining and nourishing etc (*bhrtya or bhrt*[5] *or bhrñ bharane*[6]). In other words, besides proper care etc of child, its procurement i e achievement of conception, its support, maintenance and nourishment etc the subject to be dealt in *prasūti-tantra* come under this speciality Various gynecological disorders i e *yoni-rogas* [7] and menstrual disorders i e *ārtava-dosas* [8] hamper achievement of conception, Naturally knowledge of these conditions i e *strī-roga* or gynecology can also be included under *kaumāra-bhrtya*

Suśruta has described in detail the subjects to be discussed under these specialities He says that management of child, wet-nurse, vitiation of milk, disorders developed due to vitiated milk and *grahas* alongwith their treatment come under *kaumārabhrtya* [9] *Yoni-rogas* (gynecological disorders) and the subject desenbed in *Śārīra-sthāna*[10] are also to be included in *Kaumāra-bhrtya* Anatomy of reproductive system, physiology of menstruation and conception, embryology, antenatal care, abortions, normal delivery and puerperium etc all are described in *Śārīra-sthāna*, except obstructed labour i e *mūdha-garbha* which is considered as *Śalya* [11] This shows that during the period of Suśruta obstructed labour was managed by surgeons, while remaining obstetrics and gynecology was dealt by specialists of *Kaumāra-bhrtya* The incorporation of *Yoni-rogas* within the purview of *Kaumāra-bhrtya* becomes clearer when one reads the line 'Now ends the *Kaumārabhrtya*' at the end of SS U 38 dealing with *yoni-rogas*

Hārīta, naming it *Bāla-cikitsā* says that the science of preparation or approach for *garbha* (foetus) and *sūtikā* (parturient women) alongwith treatment of pediatric problems come under this [12] Kāśyapa has classified age of child as *garbha*,*bāla* and *Kumāra*[13] meaning thereby that care of *garbha* (foetus), the basis of antenatal care, comes under the care of child

It appears that due to utmost importance of the child specially as a heir, entire physio-pathology of female reproductive system was described keeping in view the achievememt of healthy normal son, under the title of *Kaumāra-bhrtya* Care of newborn hitherto considered under the domain of obstetrician has also developed now as a speciality i e neonatology which includes problem of feeding, in other words, *dhātrī* and *satnya-dosas* etc as described in *Āyurvedic* classics Here the subject related exclusively to obstetrics and gynecology is being dealt, leaving care of newborn, vitiation of milk and its treatment and *dhātrī* etc

In the *Caraka-samhitā*, the earliest amongst the available Āyurvedic classics, three bones of pelvis[14] and classification of age (childhood, adulthood and old age)[15] are mentioned, however, these are not specific to the female, detailed description of menstruation, conception, embryology, antenatal, natal and post-natal care are available

Menstrual blood, which is red, non-unctuous comes without pain or burning-sensation and at the interval of one month for five days is normal[16] The woman, for first three days should remain segregated, celibate with restricted activity and diet, on fourth day after taking head-bath, and anointing and dressing up with intact clean garments should meet her husband [17] The woman having taken this bath possessing healthy reproductive organs is called *ṛtumatī*[18]

The woman is mature to achieve conception at the age of sixteen,[19] very young or old, not having healthy physical or psychological status should not be impregnated, the coitus should be done in supine position or else *dos*as obstruct the passage and woman does not get conception [20] It is emphasised that physical and psychological status of couple and environment influence the physical and psychological character of future offspring Detailed mode of life for the couple i e use of cleansing measures, milk and *ghrta* medicated with drugs of *madhura*-group by husband and oil and *māsa* etc by wife and specific ritual i.e *putresti-yajña* is prescribed The woman desirous of specific complexion or character in her child should live in identical environment, think and emulate similar persons [21]

Copulation on even or odd days gives birth to male or female child respectively [22] The *śukra* discharged by male reaches uterus, gets mixed with *ārtava* or *śonita*, the *ātma* or *jīva* associated with *sattva* descends, thus combination of *śukra, śonita* and *ātmā* inside the womb is termed as *garbha* [23] Thus the *garbha* is formed of *sadbhāvas* (six factors) i e mother, father, *ātmā, satva, sātmya* and *rasa* collectively, not individually Specific human faetures and qualities come due to *svabhāva*[24] (nature) The *pañcamahābhūtas* come to this *garbha* from four sources i e through *śukra, śonita, ātmā* and *rasa* [25] Specific psychological and/or physical components of body developing from these six factors or *pañcamahābhūtas* are described in detail [26] Nourishment of foetus is divided in two stages i e before clear manifestation of body parts by *upasneh* and *upsveda* (selective transfer and physical osmosis) and after manifestation of body parts through *nābhi-nādī* attached to *aparā*[27] (placenta and umbilical cord) Monthwise development of foetus, instability of *ojas* in eighth month [28], first-emerged body part,[29] *strīkara, pumkara* etc factors, auspicious and

inauspicious features of *garbha* and body-parts developing after birth[30] etc are described *Tejas* is responsible for formation of body complexion, its association with other *mahābhūtas* gives rise to different body complexions [31] Predominance of *śonita* or *śukra* is responsible for birth of female or male child respectively and the division of this combination of *śukra* and *śonita* by *vāyu* gives rise to multiple pregnancy [32] Abnormalities of *bīja*(sperm and ovum), *ātma-karma*(own deeds), *āśaya* (uterus i e environment), *kāla* (time i e age) and diet alongwith mode of life of woman are the causes of teratological abnormalities [33] Indirect reference for chromosomal or genetic abnormalities is also available as it is mentioned that if whole *bīja* (genetic factor) is defective the conception will not take place, however,if a *bīja-bhāga* or *bījabhāgāvayava* is defective then body part developing from these would be abnormal [34] The *pumsavan-karma* should be done after conception but before distinction of foetal body parts, detailed procedure is also described [35]

Detailed clinical features of the woman having recent conception (first trimester), after distinction of body parts of foetus (second trimester onwards), during fourth to seventh month of pregnancy corresponding to foetal development and on the basis of the sex of foetus (if carrying a female foetus then left body part more active, first appearance of milk in left breast, liking female company and sex, foetus more on left side of abdomen etc and in opposite a male)[36] are described Features and importance of *dauhrda* (woman with two hearts i e her own and foetal) alongwith consequences of its non-fulfilment[37], general instructions about dietetic regulation and mode of life of pregnant woman including specific diet during every month of pregnancy (rich in milk and other nutrients as per requirement of maternal health and growing foetus), enema and vaginal tampons with medicated oil to normalise *apāna-vāyu* and provide unction to generative passage,[38] specific attention to keep the expectant mother in happy mood and high spirit and contra-indications during pregnancy alongwith their effects[39] and drugs specifically beneficial during pregnancy[40] (*garbhasthāpaka* drugs) are ample evidences of high quality of antenatal care

Certain diseases peculiar to the pregnant woman i e *kikkisa*[41] (stria-gravidarum), *udāvarta*[42] (constipation associated with severe flatulence), causes, clinical features and treatment of abortions[43], *garbha-śosa*[44] (intra-utrine growth retardation), *upavistaka, upaśuska* or *nāgodara garbha*[45] (missed abortions), *prasupta-garbha* (post-maturity), *bhūtahrta-garbha*[46] (pseudosysis) and *rakta-gulma*[47] (molar pregnancy) etc are described Elaborate description of principles of treatment of woman during pregnancy i e use of soft,sweet,liquid etc [48] drugs, contra-indication of the use of cleansing measures and their effects[49] is given

Foetus stays in uterus in universely flexed attitude, facing towards the back of the mother and keeping head upwards [50] From the first day of ninth month to the whole tenth month is the period of normal labour, stay of foetus beyond this period is abnormality [51] Specific accouchement ward with separate kitchen, and lavatory etc should be constructed with the wood of inguda, etc over a clean land, beds and all others necessary articles, drugs and instruments likely to be required during labour including its complications should be stored in this ward The expectant woman was

made to enter this ward in the beginning of ninth month after the prescribed rituals and advised to stay there and wait for labour [52] The accoucheuses should be multiparous,good-natured women experienced in conducting the labour [52] The foetus rotates due to action of *prasūti-māruta* at the time of labour and is delivered with head down position, this is normalcy, all other positions/presentations are abnormal [53] Clinical features of the first stage (*prajanana-kālābhimata*) i e pain, vaginal discharge, establishment of true labour pains (*āvī*) and discharge of liquor-amni and the second stage (*adhah parivartana* of *garbha*) of labour, management during these stages with emphasis on psychological encouragement and delivery in lying-in-position, use of certain drugs as inhalation, local massage and recitation of hymns in event of failure of rotation or descent of foetus (avāk *parivartana*), instructions for bearing down efforts, expulsion of placenta after delivery of child,complications and treatment of retention of placenta etc are described in detail.[54] Causes, clinical features and treatment of intra-uterine death of mature foetus are mentioned, if the foetus is not delivered with the use of medicine etc then the case should be referred to a surgeon [55]

The puerperal woman was managed with specific diet and massage etc , any disease affecting puerperal woman becomes incurable or is cured with great difficulty because of the effect of carrying the foetus, stress and strain of labour and loss of blood etc Line of treatment of diseases of this period is also described [56]

Almost all gynecological disorders characterized with dysmenorrhoea, oligomenorrhoea, amenorrhoea, meno-metrorrhagia, congenital abnormalities, dyspareunia, nymphomania, hormonal deficiency including hypophysis abnormality, pyogenic or fungal infections, backache, utero-vaginal prolapse, cervical erosion, infertility, sexual incompatibility, effluvium seminis and even repeated abortions etc are described under twenty *yoni-vyāpad* Amongst these *vātikī, acaranā, prākcaranā, udāvartinī, putraghnī, antarmukhī, sūcīmukhī, śuskā, sandha-yoni* and *arajaskā* and *mahāyoni* etc eleven are due to *vāta*, *paittikī*, *raktayoni* or *asrjā* and *arajaskā* etc three due to *pitta*, *ślaismikī* due to *ślesmā*, *sānnipātikī* due to all three *dosas*, *pariplutā* and *vāminī* due to two *dosas vāta* and *pitta* and *upaplutā* and *karninī* due to *vāta* and *kapha* Besides giving detailed etio-pathogenesis, clinical features and treatment of all these conditions,[57] symptomatic treatment of excessive dilatation,[58] stiffness or roughness,[59] hyperaesthesia or pain,[60] foul smell,[61] blisters etc *śopha* i e inflammation,[62] itching,[63] excessive unctuousness[64] of vagina and vaginal discharges[65] (leucorrhoea) alongwith principles of surgical treatment i e correction of crooked of tortuous, dilatation of constricted, replacement of displaced downwards and constriction of dilated *yoni* [66] etc are given Indirect reference of hysterectomy is also available as excessively displaced yoni is said to be a *śalya* [66] Besides these, another disease named *yonyarśa* [67] (vaginal or vulval warts) and very elaborate description of meno-metrorrhagia under the heading of *asrgdara* [68] is available.

Suśruta-samhitā, almost contemporary or just behind the *Caraka-samhitā* is considered as the text mainly of surgery In this ,one finds almost the entire subject of

prasūti-tantra and *strī-roga* as given in *Caraka-samhitā* except the effect of coitus done in different postures and subject related to religion or social customs like details of *putresti-yajña*, specially the method to achieve the child of desired characters, process of the descent of *jīva* or *ātmā*, *manas*, *pañcamahābhūtas* and their source, names as *ṣadbhāvas* of *garbha*, features developing from *sattva*, *strīkara* etc factors of *garbha*, body-parts developing after birth, auspicious and inauspicious features of *garbha*, clinical features of pregnant woman during different months of pregnancy, *garbha-sthāpaka* drugs, *kikkisa* and *udāvarta* of pregnant woman,*upaviṣtaka* and *upaśuṣka garbha*, the details of articles to be stored in accouchement-ward and classification of *asrgdara* Amongst the entire list, most important omissions are different physical and psychological constituents of foetus developing from *pañcamahābhūtas*, the reference about abnormalities of *śukra* and *śonita* (sperms and ovum i e chromosomal and genetic abnormalities), *āśaya* (uterus i e environmental) and *kāla* (age) under the causes of teratological abnormalities, defects of *bījabhāga* and *bīja-bhāgāvayawa* (chromosome and gene), *kikkisa* (stria-gravidarum), liquour amni and surgical treatment of gynecological disorders

Contributions of *Suśruta* made in the field of obstetrics specially in the knowledge of anatomy of reproductive system, physiology of menstruation and obstructed labour are noteworthy and are discussed hereunder

Waist of female is broader than of male,[69] pelvis consists of five bones,[70] and *sāmudga* and *tunna-sevanī* types of joints[71] (not specific for female) Female possesses three extra external orifices i e two of breasts and third for discharge of menstrual blood [72] The *yoni* (vaginal canal) has three *āvartas* and resembles middle portion of conch-shell, in third *āvarta* of this is *garbhāśaya* (uterus),[73] which is the eighth āśaya and is situated behind the bladder in between the *pakvāśaya* (large bowels) and *pittaaya* (small bowels) [74] Besides, *dhamanīs*,[75] *sevanī*, *yoni*, *phalasrotas* and *mūtrapraseka* etc *marmas* (vital parts)[76], two *ārtava-vaha srotas*[77] and twenty extra *peśīs* (muscles) i e five in each breast, and ten in reproductive system, the three *peśīs* analogous to *muska* and *lakṣana* of male are also said to be present covering the internally situated *phala*[78]

Females also possess *śukra* [79] *The ārtava,* which is *āgneya,*[80] is formed alongwith *śukra* after one month from *āhāra-rasa*,[81] and is discharged after coitus [82] Rajas is formed from *rasa*,[83] is responsible for the development of secondary sex characters before menarch [84] Age of menarche and menopause is twelve and fifty years respectively [85] *Ārtava* is accumulated in vascular apparatus of uterus for the whole month to be discharged during menstruation [86] If the woman uses mascara,cuts her nail etc. during menstruation the child concieved during that cycle would be blind, leprous etc., side-effects of coitus are also mentioned.[87] *Rtu-kāla* is said to be of twelve days or even without evident menstruation, the conception does not take place after *ṛtu-kāla* as *yoni* gets constricted,[88] use of *ksāra* is contra-indicated during this period [89]

Equating fertilization with germination of seed four factors i.e. rtu (season or *ṛtukāla),kṣetra* (field or female generative tract), *ambu* (water or nutrient) and *bija*

with medicated oil etc are indicated.[112] In the event of sudden death of woman, having full term and alive foetus immediate laparotomy is advised.[113]

Period of puerperium is said to be of 1½ month or till the onset of menstruation[114] denoting attainment of anatomic and physiologic pre-pregnancy state respectively. Specific management of *sūtikā* living in wild place[115], causes, clinical features and treatment of *makkala-śūla*[116] (after pains) and *rakta-vidradhi*[117] (puerperal pyometra) are given.

Almost all gynecological clinical entities described by Caraka under twenty *yoni-vyāpads* have been described by *Suśruta*, albeit in a summarised way and with a little difference in causative factors, as he has classified five under each *dosa* i.e. *udāvartā*, *vandhyā*, *viplutā*, *pariplutā* and *vātalā* due to *vāta*, *rudhira-ksarā* or *lohitakṣarā*, *vāminī*, *sraṃsinī* or *prasraṃsinī*, *putraghnī* and *pittalā* due to *pitta; atyānandā*, *karṇinī*, both *caranās* i e *acaranā* and *aticaranā* and *śleṣmalā* due to *ślesmā; ṣaṇḍā, phalinī, mahatī* or *mahāyoni*, *sūcivaktrā* and *sarvajā* due to vitiation of all the three *doṣas*.[118] Though the description of *asrgdara* is also very short, he has included even normal or scanty bleeding coming in short intermenstrual period under it [119] Besides this, a good number of other menstrual disorders i e eight *ārtavaduṣṭis* (one each due to individual *dosa*, one each due to *sannipāta* i e *mūtrapurīsagandhi* and *rakta* i e excessive bleeding with *Kunapa-gandhi* and three due to combination of two *doṣas* i.e *granthibhūta* due to *ślaṣmā* and *vāta*, *pūtipūyanibha* due to *pitta* and *ślesmā* and *ksīna* due to *pitta* and *vāta*)[120], *ārtavaksaya* (oligomenorrhoea due to hormonal deficiency) as well as *ārtava-vṛddhi*[121] (menometrorrhagia due to excessive hormone), and *naṣtārtava*[122] (amenorrhoea due to endometrial abnormality) with their etio-pathogenesis, clinical features and treatment have been described

In presently available other three *Samhitās* of ancient period i e *Kāśyapa*, *Hārīta* and *Bhela* though the subject related to *prasūti-tantra* is given in considerable details, but not to that much depth as seen in *Caraka* and *Suśruta samhitās,* however, the *strī-roga* is dealt in much concise way, except the description of some menstrual disorders and recipes for infertility nothing more is given.

In *Kāśapa-samhitā* alongwith other characters of body even the effects of different shapes and size of *yoni* (vulva, vigina, uterus) and pubic hair in future life have been given [123] The absence of menstruation in young girls is said to be due to *hīna* (under-developed) state of *yoni* [124] Alongwith *śukra*, the *śonita* also remains present from childhood, the diet, mode of life and health also influence attainment of maturity [125] Suberrhines and emetics are contra-indicated during menstruation [126] Duration of *ṛtu-kāla* is said to be of twelve, eleven, ten and nine days in *brāhmana, ksatriya, vaiśya* and *śūdra* woman respectively and the conception occuring in latter half of cycle results in weak children [127] Causes of similarity in features, pleasure and pain etc in children of twin pregnancy[128] and much detailed description of ante-natal care i e dietetics, mode of life, contra-indication and their effect etc is given [129] An amulet of *trivṛta* is advised to be worn by pregnant or delivered woman [130] Owing to much importance attached to the diseases affecting pregnant as well delivered woman

four full chapters are devoted to these subjects. Detailed treatment of diseases of pregnant women, principles of treatment of certain diseases during different gestational periods, effect of cleansing measures given to a pregnant woman suffering from fever, more number of drugs beneficial for foetus; bad prognostic features likely to kill the foetus or mother herself or the woman having *mūḍha-garbha* etc are given.[131] A very typical description of *jātahāriṇī* attacking the pregnant woman, classified on the basis of mode of transmission i e *daivī*, *mānusī* and *tiraścīnā* (animals and plants), further sub-classified under castes or types of animals etc and on the basis of prognosis numbering thirty five i e *sādhya* (eleven), *yāpya* (sixteen) and *asādhya* (eight) characterized with menstrual abnormalities, vaginal discharges, abortions of different gestational periods, still-births, neonatal deaths, death of sons and children and clinical features of the woman seized with *jātahāriṇī* etc is found [132] To prevent premature labour use of an incanted thread (*varaṇabandha*) in eighth month[133] is prescribed Detailed and clearer description of *rakta-gulma*[134] (molar pregnancy) including causes of breast changes and *dauhṛda* etc is given Without expulsion of placenta woman can not be called *sūtā*[135] or delivered Effect of *āvīs* (labour-pains) on progress of labour and light coloured scanty or bright red coloured show for male or female child respectively[136] and causes of reappearance of menstruation after delivery i e replenishment of *dhātus*, stability of body and collection of blood in *yoni* etc.[137] are described. Much detailed description of management of normal puerperium on the basis of the place of living including foreigners, use of oil or *ghṛta* after birth of son or daughter respectively,[138] treatment of thirty five[139] and sixty four puerperal disorders[140] and use of *śatapuspā* or *śatāvarīkalpas* for menstrual disorders[141] etc. are ample evidences of advancement made in the field

In *Hārīta-samhitā* middle age is divided in *yuvā* and *madhyamavasthā*, further on the basis of working capacity as *uttama*, *madhyama* and *adhama*, the age of girls is classified as *bālā*, *mugdhā* and *pragalbhā* etc [142] Duration of menstrual flow is said to be of seven days [143] In females both *retas and rajas* are present [144] The infertile woman loses more *ārtava* due to absence of *stanya* [145] After fertilization, *kalala* (morula), *budbuda* (blastocyst) and *ghana* (soild i.e collapse of blastocyst) is formed in one, ten and fifteen days respectively, lanugo appear in fourth month, by eighth month association of *agni* takes place, due to consumption of diet capable of aggravating *vāta, pitta* and *kapha* identical *prakṛti* and even some congenital abnormalities in foetus develop [146] Monthwise treatment of excessive quivering of foetus is prescribed [147] As the foetus develops disenchantment from intra-uterine stay, so it is delivered [148] Premature delivery occurs due to effect of *dosas* specially propulsion caused by *vāyu* [149] *Mūdha-garbha* is classified under *vātika* etc seven types, perineal rigidity is also included in the etiology, besides clinical features and treatment of all these types, manual extraction in squatting position i e making woman sit over circular pad with abducted or stretched thighs is advised [150] In the clinical features of bad prognostic signs of *mūdha-garbha*, diseased state of *garbhakosa* (uterus) and slow movements (inertia) are also included [151] *Vandhyā* (infertility) is classified under six i e. *kākavandhyā* (one child sterility), *anapatyā* (no child), *garbha-srāvī* (repeated abortions), *mrta-vatsā* (repeated still-birth), due to *bala-ksaya* and sixth due to weakness and diseases of uterus etc , *rajas* vitiated by *vāta* etc *dosas* produces clinical

features not only related to menstrual blood but other systems also, treatment of these as well as beneficial and contra-indicated diet for an infertile woman are described.[152]

In *Bhela-saṃhitā*, ascent of sperms is described i.e after discharge of *śukra* it is grasped in *āvartas* of *yoni*, runs in them and reaches uterus.[153] In the foetal development *agni* and *vāyu* play important role.[154] Foetus is nourished by *kedārīkulyā-nyāya*[155] Full maturity is the cause of labour[156] Anemia is considered as important cause of amenorrhoea[157]

In the extant Nāvanītaka, fifteenth and sixteenth chapters dealing with *vandhyā* and *subhagā-cikitsā*[158] are missing However, a good number of recipes prescribed for some other diseases are indicated such as *yoni-rujā* or *yoni-śūla*, *rakta-gulma*, *vandhyā*, *yoni-rogas*, delivering woman obstructed labour,*rajo-nigraha* (amenorrhoea) and abortions also The causes of absence of baldness in the woman is said to be due to purification of their body by discharge of menstruation[159] *Vardhamāna pippalī* (increasing and decreasing doses of *pippalī*) is said to be beneficial for infertility also[160]

In the *Astānga-samgraha of Vāgbhata* almost entire subject given in samhitās of Caraka and Suśruta is included, except *putresti-yajña* and other socio-religious subjects, sequence of descent and source of *pañcamahābhūtas* in embryo, detailed classification and clinical features of *asrgdara* of *Caraka-samhitā* and *ārtava-vaha srotas*, *marmas* of generative tract, clinical features of twin pregnancy, definition of *garbha-srāva* and *garbha-pāta* with their complications, *ārtava-ksaya* and *ārtava-vrddhi* as described in *Suśruta-samhitā* and part of foetal body developing first as given in both like *Kāśyapa-samhitā* here also presence of *rajas* from childhood is discribed[161] *Ārtava* is said to be formed from *rakta* and is discharged for three days,[162] normal amount being four *añjalis*,[163] during the menstrual period sudation is contra-indicated[164] *Rtu-kāla* may be even of sixteen days and non-achievement of conception after *rtu-kāla* is due to closure of *yoni* which dose not permit the entry of *śukra* in inner components[165] (in secretory phase cervical mucus becomes hostile to sperm penetration) Marriage of a girl of twelve years age, coming from good family free from *sañcārī-roga* (infectious diseases) besides other examination of *gotra*, physical, psychological and family status etc was advised,however, impregnation was advised only at the age of sixteen[166] as given by all other authors, predominance of ārtava on odd-days is responsible for birth of girl and the body-complexion of foetus is influenced by colour of *śukra*, diet and mode of life of pregnant woman as well as place of living, season and profession etc[167] also *Rājasa* and *tāmasa bhāvas* of *garbha*,[168] teratological abnormalities and diseases of later life due to effect of diet of mother capable of vitiation of *vāta* etc dosas,[169] and *kūcikarnaka* and *pippalī* diseases developing in foetus due to vitiation of *vāyu*[170] are given Presence of *dauhrda* as early as forty five days,[171] use of medicated water for bath and method to give *basti* (enema)[172] to a pregnant women are described in ante-natal care In the treatment of incomplete abortion it is clearly indicated that it should be treated till complete evacuation of uterus, clinical features and treatment of *upaviṣṭaka* and *upaśuska garbha* associated with *vāta etc dosas*, the delivery of both

these even after years and abortifacient treatment in event of failure in their growth and development are described.[173] Flatulence is described as *vātodara* [174] Hide is advised to be spread over the bed to be used for labour [175] Abnormality of passage as a cause of *mūdha-garbha* is mentioned in unequivocal words.[176] The bath to puerperal woman on tenth or twelfth day[177] and treatment of her *yoni-bhramśa* (prolapse/inversion of uterus) developing after delivery is prescribed [178]

In *Vāgbhaṭa's Astānga-hrdaya*, entire subject given in *Aṣṭānga-samgraha* is described in summarised way, however, he has mentioned clarity of *vāyu* and *hṛdaya* amongst the factors of *garbha*,[179] delivery of *līna-garbha* after years together with great difficulty or no delivery[180] and two *viṣkambha mūḍha-garbhas*[181] in place of the last two modes of presentation (other six modes of presentations are not described)

In *Mādhava-nidāna*, clinical features and complications etc. of diseases, description of *yoni-rogas*, abortions and *mūdha-garbha* are just as in *Suśruta*, and of *asṛgdara* or *pradara* almost as in *Caraka* [182] Eight puerperal disorders under the heading of *sūtikā-roga*[183] and etiopathogenesis, classification and clinical features of *yoni-kanda*[184] (bartholine's abscess) have been added by the author

Kalyānakāraka has dealt the subject of *prasūti-tantra* and *strī-roga* in comparatively more detail than *Mādhava-nidāna*, *Nāavanītaka*, *Vrnda-mādhava* and *Cikitsā-kalikā*, but it is almost similar as given in other texts referred above. However, in this text the age is classified as *śiśu*, *yuvā*, *madhya* and *vrddha* etc. four stages [185] The foetus suffering from *sthaulya-dosa* (large foetus) causes obstruction in delivery [186] Curd in fourth and sixth and *ghrta* medicated with *yastī* etc drugs in seventh month of pregnancy in the monthwise dietetic regimen and oral administration of paste of *lāngalī* for delivery of retained placenta are prescribed The word *mārkala* is used for *makkalla* [187]

In *Vṛnda-mādhava* dealing with the treatment of *pradara*, *yoni-vyāpad* and *sūtikā-roga*[188] nothing new seems to have been added

In *Cikitsā-kalikā*, *pradara* (menometrorrhagia) is said to be due to evil deeds (*karmaja*) and as such is not cured with medicines [189] Reference of excessive weight of foetus restricting the movements of pregnant woman is also available and certain oils are prescribed for this condition [190] Blood-letting through gourd or horn is indicated for the treatment of *makkalla* [191] Besides, this, certain recipes are prescribed for the treatment of *vandhyā* (infertility), *pradara* and easy delivery of obstructed labour etc

Preceding description clearly indicates that the subject of *prasūti-tantra* (obstetrics) and *strī-roga* (gynecology) described in both *Caraka* and *Susruta samhitās* together is of very high standard and quite scientific and practical There has been good progress upto the period of *Vāghaṭa*, later on the pace was considerably reduced but not totally stopped and there has been continuous advancement in the knowledge in form of new ideas and recipes

References

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4 Amarakosa I 1 40
5 Wılham M M *Sanskrıt-Engılsh dıctıonary*.
6 *Amarakosa* II 10 17
7 CS Cı XXX 28
8 SS Śā II 5, AS Śā I 25, AH Śā I 10
9 Ibıd Sū I 7 (5)
10. Ibıd Sū III 35-37
11 Ibıd Sū I. 7(1)
12 HS 1 2 17
13 KS Khı III 72
14 CS Śā VII 6.
15 Ibıd Vi VIII 122
16 Ibıd Cı. XXX 225, 226
17 Ibıd Śā VIII 5.
18 Ibıd. Śā IV 7.
19 Ibıd Cı II—IV 40-42
20 Ibıd Śā VIII 6
21 Ibıd. Śā VIII 4, 5, 7-14
22 Ibıd Śā VIII 5
23 Ibıd Śā III 3, 8, IV 5, 7, 8
24 Ibıd Śā III 3-9, IV 4
25 Ibıd Śā II 26, 27, 33-36
26 Ibıd Śā III 6-14, IV 12
27 Ibıd Śā IV 27, VI 23
28 Ibıd Śā IV 9-11, 20-24
29 Ibıd Śā VI 21
30 Ibıd Śā IV 14, 42-45
31 Ibıd Śā VIII 15
32 Ibıd Śā II 12-14
33 Ibıd Śā II 29
34 Ibıd Śā IV 30
35 Ibıd Śā VIII 19
36 Ibıd Śā II 23-25 IV 16, 20-23
37 Ibıd Śā IV 15, 17, 19
38 Ibıd Śā VIII 21,32
39 Ibıd sū XXV 40, Śā IV 18, Śā VIII 21
40 Ibıd sū IV 18-49, Śā VIII 20
41 Ibıd Śā VIII 32
42 Ibıd Śā VIII 29
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44 Ibıd Śā II 15

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47 Ibid Ni III 13, 14, 16, 17, Ci V 19, 169-173, 177
48 Ibid Śā VIII 22
49 Ibid Sū. XIII 54, XIV 16, XXV 40, Si II. 8, 9, 11, 12, 20, 21
50 Ibid Śā VI 22
51 Ibid Śā IV 25
52 Ibid Śā VIII 33-35
53 Ibid Śā VI 24
54 Ibid Śā. VIII 36-41.
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58 Ibid. Ci. XXX. 73-78
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63 Ibid. Ci. XXX. 103-104
64 Ibid. Ci XXX. 73-82, 121-123
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66 Ibid Ci XXX. 43-45
67 Ibid Ci XIV 6
68 Ibid Ci XXX. 204-224, 227, 228
69 SS Sū XXXV 12
70 Ibid Śā V 19
71 Ibid Śā V 27
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73. Ibid. Śā. V 43
74 Ibid. Śā V 8, 39, Ci VII 33
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76 Ibid. Ci. VII 36, 38
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78 Ibid Śā V 39-41
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80 Ibid. Sū XIV 7, Śā III 3
81 Ibid Sū XIV 14
82 Ibid Śā II 36
83 Ibid. Sū XIV 6
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90 Ibid Śā II 33

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91 Ibid Śā IV 24

92 Ibid Śā IV 25-31

93 Ibid Śā II 35

94 Ibid. Śā II 37

95 Ibid Śā II 47-49.

96 Ibid Śā II 53, 54

97 Ibid Śā IV 24

98 Ibid Śā III 34

99 Ibid Śā III 22-28

100 Ibid Śā X 4

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102 Ibid U XXXXIX 4

103 Ibid Ni VIII 9, 10, 13

104 Ibid Śā X 57-65

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107 Ibid Śā III 30

108 Ibid Ni VIII 7, 8

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111 Ibid Sū XXXIII 13; Ni VIII 6

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113 Ibid Ni. VIII 14

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118 Ibid U XXXVIII (complete)

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134 Ibid Ci Gulmacikitsā 14-19, Khi IX 17-36, 43-64

135 Ibid Khi XI 6

136. Ibid. Śā Jāti.
137. Ibid Khi IX 21, 22.
138. Ibid. Khi. Xi 17-36.
139. Ibid Ci *Dusprajātā Cikitsā* (complete)
140. Ibid Khi XI 1-16, 37-174
141. Ibid Ka. *Śatapuspāśatāwarī-kalpa* 10-17, 23 26
142. H.S 1.5. 4-9, 13, 14
143. Ibid 6. I 8.
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145. Ibid 1 8 10.
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171. Ibid Śā. II 18
172. Ibid. Śā III 14, 31
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177. Ibid U I 27
178. Ibid Śā III 36
179. AH Śā I 8, 9
180. Ibid Śā II 21
181. Ibid Śā II 30

182 MN. LXI, LXII, LXIV
183. Ibid LXV
184. Ibid LXIII
185. KK II. 8.
186. Ibid XII. 60
187. Ibid XXIII 22-24, 31, 33
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12

SIDDHA MEDICINE

P.V. SHARMA

Siddha Medicine is of Dravidian origin and has its entire literature in Tamil Even now it is prevalent in Tamil Nadu along with other systems of medicine

As in case of Āyurveda, the origin of *Siddha Medicine* is traced to mythological sources According to tradition, Lord Śiva delivered the knowledge of medicine to Pārvatī From Pārvatī this was received by Nandī who gave it to Siddhas [1] Thus Siddha Medicine belongs to Śaiva tradition

There were 18 Siddhas according to tradition of whom Agasthiyar (Agastya) was the topmost He is regarded as the originator of the Tamil language and also of the Siddha Medicine.[2] The name of Agasthyar has been legendary and a number of works even upto the later period are ascribed to him The list of Siddhas and the names therein varies in different traditions [3]

According to one tradition, the 18 Siddhas are as follows

1 Nandi
2 Agasthiyar
3 Thirumular
4 Punnakkeesar
5 Pulasthiyar
6 Poonaikannar
7 Idaikkadar
8 Bogar
9 Pulikai isar
10 Karuvurar
11 Konkanavar
12 Kalangi
13 Sattainathar
14 Azhuganni
15 Agappai
16 Pumbatti
17 Theraiyar
18 Kudhambai[4]

The word *Siddha'* means that who has achieved some extra-ordinary merit of power (*Siddhi*) This achievement concerned with both discipline of mind and superiority of body which was attained through pursuit of yoga and medicine respectively Thus siddhars became the symbols of psychosomatic perfection and so was the Siddha Medicine a combination of medicine and yoga Siddhas aimed at Jivanmukti which meant liberation of soul in an imperishable body These aspects were fulfilled by yoga and medicine respectively [5]

Basic concepts:

Basic concepts of Siddha Medicine are almost the same as of Āyurveda such as *Pañcabhūta*, *Tridosa* and *Saptadhātu* The *pañcabhūtas* are termed as *Munn*, *Neer*,

Thee, *Vayu* and *Akasam* The three *dosas* are *vatham*, *pitham* and *kapam*, each of the three dosas is divided into five types The only difference seems to be that the Siddha Medicine holds predominance of vatham, pitham and kapam in childhood, adults and old age respectively whereas in Āyurveda it is quite reverse e g. *kapam* in childhood and vatham in old age. The three doṣas are made up of five bhūtas and so are the drugs which are used to maintain and modify them The similarity of Loka(*aṇḍa* = macrocosm) and *Purusa* (*piṇda-microcosm)* as propounded in *Āyurveda* is accepted here also as the basic foundation [6] Principles of treatment also are almost the same. 13 Kinds of perspiration and five kinds of fumigation are followed in Siddha Medicine as in Āyurveda.[7]

Peculiarities of the System

To make historical assessments, it would be worthwhile to note the peculiar features of the *Sidha* Medicine which distinguish it from the other systems They are as follows.

1. Though in drugs, *rasa guṇa*, *vīrya*, *vipāka* and *prabhāva* are recognised as in Āyurveda, the concept about twenty *gunas* is not clear.[8]

2. The use of metals and minerals is predominant.[9]

a) They classify drugs in six groups such as *Uppu* (salts), *Pashanam*, *Uparasam*, *Loham*, *Rasam*, and *Gandhakm* [10]

b) Mercury is used in five forms-*Rasam*(mercury), *Lingam* (red sulphide of mercury), *Veram* (mercury perchloride), *Pooram* (mercury subchloride) and *rasa-chinduram* (red oxide of mercury) They are known as panchasutha.[11]

c) Metals and other minerals are classified into five groups according to predominance of bhūtas. Similar is the classification of body parts For instance, gold is predominant in prthivi bhūta and so are legs Hence in dysfunctioning of legs gold is prescribed [12]

d) There is another classification according to *nāda* and *bindu* which is partly on tantric basis. For example, vengaram (borax) is *nāda* and navasaram (Ammonium chloride) is *bindu* [13]

3. Some pharmaceutical preparations are peculiar to this system such as *chunnam* (alkaline preaparations of metals), *kattu*(bound mercury), *mezhugu* (waxy preparations) etc *Bhasmas* are prepared comparatively in less time by adding certain substances such as *Jayaneer*(a particular liquid preparation), *muppu* (combination of three salts) and *guru* (combination of certain substances) There are also groups of substances which help killing of metals

Amuri is a product obtained from human urine *Amuriuppu* is urine salt[14] obtained after evaporating the liquid portion of urine

4. In diagonosis, examination of eight items is prescribed which is commonly known as *aṣṭasthāna-parīkṣa* These are-*nāḍī* (pulse), *kan* (eyes), *svara* (voice), *sparisam* (touch), *varna* (physiognomy), *na* (tongue), *mala*(faeces) and *neer* (urine). Specially, pulse-reading has been considerably developed by the *Siddhas* and is used in diagnosis and prognosis of diseases. *Nāḍi'* also denotes nerves which number 72000 in tantric texts.[15] Similarly urine examination is also characteristically processed by putting oil drop on the surface of urine and testing its movements Basides, smell, colour, deposits etc are also observed. There is detailed description of urine examination in Siddha texts.[16]

5. Classification of therapeutic agents as *śatru* (enemy) and mitru (friend) is quite peculiar to Siddha system [17] The former means synergist and the latter antagonist .

6. Of the eight *angas* of Āyurveda, *Kāyacikitśa*, *Bālavāhaṭam* (pediatrics), *Nanjunool* (toxicology), *Nayanavidhi* (ophthalmology) and *Kāyākalpa* are developed in *Siddha* system. Other *angas*, however, are not specified though their references are found here and there.[18]

Out of the *pañcakarmas*, the *Siddhas* use only *purgatives* (Virecana).[19] Siddha texts describe 96 eye diseases [20]

In mental diseases, *peranda bhasma* is used This is made of human skull bones and the skulls of dogs.[21]

Kāyākalpa combines both rasāyana and vājīkarna. This has been given great emphasis as the aim of Siddhas was to make the body imperishable Gold and mercury were two important drugs used for *kāyākalpa*.[22]

7 In addition to drugs, *prāṇāyāma* and other disciplines of yoga are necessary for good health and longevity Over and above, consideration of diet in respect of quality and quantity is also important [23]

Antiquity

Assessing the points of similarity with and difference from Āyurveda, it is clear that the former are more then the latter ones. The basic concepts of the Siddha Medicine are the same as those of Āyurvada. The difference is mostly in details influenced by the local tradition which has its roots in ancient Dravidian culture.

The predominant use of metals and minerals particulary that of mercury combined with tantric cult can't be traced to antiquity. The use of metals is not much in ancient treatisw. mercury is still less. It is only since the period of Vāgbhaṭa (6th cent. A.D.) that the internal use of mercury seems to have started

The period of alchemy actually has the origin with the Siddhas who were connected with tantric cult which aimed at perfection of man not only on spiritual level

but also on the physical level To achieve the former yogic practices were formulated and for the latter mercurial formulations were evolved which formed the nucleus of *Rasa-Sastra* Some of them were also engaged in transmutation of base metals which is alchemy proper. Probably the tradition of *Rasaśāstra* itself implanted and developed in South India quite early was named as Siddha Medicine evidently in the name of the originators of the tradition Due to local conditions, the Siddha literature flourished in Tamilian background with all its texts in Tamil, whereas in North *Rasaśāstra* developed in its own conditions and the texts on the subject were written in Sanskrit. Secondly Āyurveda, in North, utilised the materials of *Rasaśāstra* in practice of medicine but leaving its tantric garb whereas in South the Siddha Medicine maintained its original tantric form thus posing difference from Āyurveda.

The use of human urine in medicine also stated with the tantric cult[24] and found prevalence in the medieval period. In Āyurveda *CS* does not mentions it, SS mentions it briefly,[25] and is clearly described as Rasāyana later on in *Bhāvaprakāśanighaṇṭu.*[26]

Bogar, Idaikodar and Theraiyar perhaps belonged to later medieval period.[27] Bogar along with his disciple Pulippani probably had visited China[28] (It is no wonder that he brought with him the alchemical practices and also the pulse-lore from them). Bogar is regarded as the Founder of medico-botanical study. He composed texts on nigandu (naghaṇṭu) and also the processings of mercury.[29]



Agastya
Sri Naltunaiyappar temple, Thanjavur
(Courtesy· Indian Institute of History of Medicine, Hyderabad)

Agastya is said to be the Founder of the Siddha Medicine. He occupies the same position as Hippocrates in modern medicine [30] The legend about his shifting to the south is well mentioned in the epics [31] In the period of *Ramāyāna* he seems to have settled and been honoured in South [32] Thus it is natural that every tradition in South including language and culture has its origin from Agastya Agastya is mentioned among the sages present in the first assembly in CS (Su) but surprisingly in *Rasaratnasamuccaya* he is not mentioned among the twenty seven Siddhas though Nandi is there as author of some text It may be conjectured on this evidence that Nandi was recognised as an authority commonly in North as well as South while Agastya established his tradition in South and as such did not find mention in the above text originated in North. Most of the texts attributed to Agastya are of later period Agastya, in fact, is a legendary figure like Vyāsa in whose name there are a number of works extending to different regions and peroids of time.[33] In fact, in the tradition of Siddha Medicine, Śiva, Pārvati, Nandi and Agastya were mythological figures and thereafter actual Siddhas belong to the later ancient and medieval periods

From these points, it is not possible to place the Siddha Medicine in hoary antiquity as claimed in certain quarters [34] Siddha Medicine, essentially, is a product of Tamil Land and culture and having predominance of *Rasaśāstra*[35] has undergone restricted development according to local conditions It might have its beginning in the ancient period but it developed mainly during medieval one

References

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2 Op cit p. 2
3 Kandaswamy Pillai N *History of Siddha Medicine*, Madras, 1979, PP 345-349
There are twelve groups of 18 Siddhas according to different traditions In some of the lists the number is even less or more (upto 26)—(Op cit PP 342-345)
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34 Veluchamy et al : p 7. Pillai int p 1
35 This is also proved by the fact that in Siddha tradition, the texts of *Rasaśāstra* such as *Rasahrdaya*, *Rasārṇava*, *Rasaratnasamuccaya* etc. are considered as Siddha works in Sanskrit (See Pillai pp 398-400).

13 INDIAN MEDICINE ABROAD

13.1

TIBETAN MEDICINE

BHAGWAN DASH

According to Tibetan tradition knowledge (*rig gnas* = lit *vidyā sthāna*), both religious and secular, are of ten categories The major five categories (*che ba lna*) *are as follows*

(1) *Bzo rig pa (Śilpa-śāstra)* or Architecture;

(2) *Gso ba rig pa (Cikitsā-śāstra)* or Medicine,

(3) *Sgra'i rig pa (Śabda-śāstra)* or Grammar,

(4) ***Tshad*** *ma rig pa (Pramāna-śāstra)* or Logic, and

(5) *Nañ don rig pa (Adhyātma-śāstra)* or Religion

From the above, it is obvious that in ancient Tibet, medicine was recognised as a highly specialised and useful branch of knowledge and it was held in high esteem Religion and medicine are interdependant A medical man can not afford to be irreligious and a monk or priest can not perform his duties without sufficient knowledge of medicine

The ancient religion of Tibet was known as *Bon* The religion of Lord Buddha came to Tibet during the reign of the king Sroñ-btsan Sgam-po, in 7th cent A D and it is known as *Chos* Four works on medicine based on the *Bon* religious tradition were composed by Khyung-sprul Jigs-med Nam-mkha'i Rdo-rji in 1937-1950 and published by the Tibetan Bon po Monastic Centre in 1970 During the reign of the king Sroñ-btsan Sgam-po (7th cent) international seminars were held at Lhasa in Tibet to which doctors from different parts of the world were invited The king sent his scholar Prime Minister Thon-mi Sam-bho-ta in 645 A D to India to learn both secular and religious literature Thereafter, with the help of Li-byin (Lipi datta) of Kashmir, he formulated sripts for the Tibetan language He, along with a team of scholars, both Indian and Tibetan, translated number of Indian works, both religious and secular These works were subsequently grouped into two categories, namely *Bka' 'gyur* (pronouced as Kanjur) and *Bstan 'gyur* (pronouced as Tanjur) In the latter, 22 Ayurvedic works are incorporated in translated form (Tibetan) All these are originally written by Indian authors, both Hindus and Buddhists Some other works on medicine (Āyurveda) were also translated later Since contents of Tanjur were already given a final shape, these were propagated separately. One such text, which is very popular among Tibetans, is

Rgyud bźi This apart, Tibetan scholars composed several original works on Medicine and original commentaries on Indian works

All the above mentioned works, written according to *Bon* tradition, and after Buddhism *(Chos)* was accepted by Tibetans, bear a striking resemblance, both in theory and practice, with Āyurveda. Surprisingly, the traditional medicine of the other neighbouring countries has not exercised any significance influence on the traditional medicine of Tibet. Number of Āyurvedic works which were translated and incorporated into Tanjur are no more available in original sanskrit. Texts quoted in the commentaries of Tibetan scholars (on Indian works) have also got lost In Tibetan medical works, several medicinal plants and food ingredients of Tibet are incorporated They have discoverd several substitutes for Indian medicinal plants and incorporated them into their materia medica On the basis of their experience, Tibetan doctors have discovered large number of new recipes and incorporated them into the corpus of their formulary Keeping in view the Buddhist philosophy, they have slightly modified some of the basic concepts of Āyurveda Whenever they have translated any ayurvedic work, in the beginning of the text, the original sanskrit name (sometimes in a slighty corrupt form) is furnished. These translations are for the most part very faithful, and to ensure this, Indian scholars were invariably associated along with Tibetan scholars in their venture For the purpose of translation, they have no doubt selected works written generally by the Buddhist authors of India but the works of some Hindu authors have also been selected for this purpose. Whether it is a translation or an original work on Tibetan medicine, they have invariably used the invocation in praise of Lord Buddha in the beginning of the text In conformity with their general policy, all Sanskrit words including proper nouns are Tibetanised in translation. Only a very few names of plants and authors bear some resemblance to their original Sanskrit But the scheme of translation they have adopted is so systematic and uniform that the lost Sanskrit texts can easily be retrieved from these works

Rgyud bźi, the Popular Medical Text

Among the secular medical texts, the most popular one is called *Rgyud bźi* (lit. *Catus-tantra* or a compendium of four treatises). According to the introductory paragraph in this work, the title of its sanskrit original was "*Amrta Hrdaya Astānga Gūhyopadeśa Tantra*". In the 8th cent A D , Vairocana, a Tibetan scholar studied this work from Candranandana of India and translated this into Tibetan On the advice of his religious preceptor, Padmasambhava, who was then in Tibet, both the Sanskrit original and its translations were not made public These works were kept hidden in Samye monastery of that country Later, on a predetermined time in the 10th cent. A D , it was taken out and propagated According to another school of Tibetan medicine, the senior Gyu-thog Yon-tan mgon-po (708-833 A.D) learnt it from India and translated it into Tibetan. This, *Rgyud bźi* was subsequently redacted and revised by another learned scholar of Tibet sde-srid Saṅs-rgyas Rgya-mtsho in 17th cent.

This work is written in the form of a dialogue between the great sage Yid-las-skey and Rig-pai ye-ses, the *nirmāṇakāya* (emanation) of Medicine Buddha. It has the following four parts

(1) *Rtsa rgyud (Mūla tantra)* or the primary text;

(2) *Bśad rgyud (Ākhyāta tantra)* or the explanatory text,

(3) *Man ṅagr gyud (Upadeśa tantra)* or the text of instructions; and

(4) *Phyi ma rgyud (Uttara tantra)* or concluding text

This work, in all its four parts has 156 chapters and include 5,900 verses (including prose paragraphs) in total.

Like other Āyurvedic works, the language and the mode of expression of this work are terse and cryptic This form of writing helps a person to memorise it conveniently and quickly. However, to explain the actual implications of the text, several commentaries were written over it The important ones are as follows

(1) *Legs bsad nor bu* (Skt *Subhāsitaratna)* by Byans-pa (14th cent.),

(2) Commentary by Zur-mkhar-ba-mnam Ñid-rdo-rje (14th cent), and

(3) *Vaidūrya sṅon-po* (skt *Nīla vaidūrya* or Blue lapis lazuli) by sde-srid Saṅs-rgyas Rgya-mtsho (1653-1705 A D)

This book became equally popular in Mongolia According to a well-known anecdote, two scholar-physicians of that country, who were engaged in professional rivalry, wrote several commentaries each contradicting the other scholar's view Both of them have drawn material for justifying their statements from Indic works

Specialised branches of Tibetan Medicine

Tibetan medicine, like Āyurveda, has eight specilised branches as follows

(1) *Lus (Kāya-cikitsā)* or General Medicine,

(2) *Byis pa (Kaumārabhrtya)* or paediatrics,

(3) *Mo nad (Striroga)* or Gynaecology,

(4) *Gdon (Bhūtavidyā)* or Psychiatry including afflictions by evil spirits,

(5) *Mtson (Śalyatantra)* or Surgery including treatment of diseases of Eye, Ear, Nose & throat

(6) *Dug (Agadatantra)* or Toxicology,

(7) *Rgyas (Rasāyanatantra)* or the science of Rejuvenation, and

(8) *Ro tsa (Vājīkaranatantra)* or the science of Aphrodisiacs

It will be seen from the above that Tibetan medicine has made important deviation from Āyurveda in accounting for the specilised branches In all Āyurvedic classics, *Śalyatantra* or general surgery and *Śālākyatantra* or treatment of the diseases of eye, ear, nose and throat are treated as two distinct and different specialised branches But in Tibetan medicine, these two are as clubbed together under one specialised branch, namely '*Mtson*' On the other hand, Tibetan medicine has treated *Mo and* (Gynaecology) as an independent speciality which appears to be more progressive Āyurvedic physicians are still following the old classical method in enumerating their specialities knowing fully well its shortcomings (in Āyurvedic colleges *strīroga* or gynaecology is taught as a separate subject) whereas Tibetan physicians have made necessary changes to suit their practical purpose

Composition of the Universe

Tibetan medicine firmly believes that the individual or the microcosm is an exact replica or epitome of the universe or the macrocosm. In conformity with the fundamentals of Buddhist philosophy, the universe, according to them, is composed of four basic elements, viz *sa (pṛthivī-mahābhūta), chu (jala mahābhūta), me (agni mahābhūta),* and *rluṅ (vāyu mahābhūta)* The fifth element, viz ākāsa, basic to Āyurvedic concepts, is not accepted by them However, they take this fifth basic element (*mahābhūta*) into account while explaining some of the intricate concepts of Āyurveda and while making a comparative statement

Composition of the Body

These four basic elements of the universe are represented in the body in the form of *Ñes-pa gsum (Tridosa), Lus zuns bdun (Saptadhātu)* and *Dri ma (Malas)* *Ñes pas* control all the physiological activities of the body, the *Lus-zuns* form the body matrix and *Dri mas* are the excreta which are formed in the body, retained for some time and then thrown out.

Ñes pa

Three *Ñes pas* are (1) *rluṅ (vāyu),* (2) *mkhris pa (pitta),* and (3) *bad kan (kapha)* The composition of these three *Ñes pas* are as follows

(1) *Bad kan (kapha)* is composed of *sa (prthivī mahābhūta)* and *chu (jala mahābhūta),*

(2) *Mkhris pa (pitta)* is composed of *me (agni mahābhūta),* and

(3) *Rlun (vāyu* is composed of *rlun (vāyu mahābhūta)*

According to Āyurveda, *vāta* or *vāyu dosa* is composed of both *vāyu* and *ākāśa mahābhūtas* In Tibetan medicine, in conformity with the Buddist philosophy, *ākāśa mahābhūta (nam mkha')* as one of the components of *rluṅ (vāyu dosa)* is not taken into account

Lus zuns

Lus zuṅs (dhātus) are the seven groups of tissue elements which constitute the body-matrix. These are seven in number as follows.

(1) *Dans ma (Rasa dhātu)* or chyle,

(2) *Khrag (Rakta dhātu)* or blood,

(3) *Śa (Māmsa dhātu)* or muscle tissue;

(4) *Tsil (Medo-dhatu)* or fat,

(5) *Rus (Asthi dhātu)* or bone,

(6) *Rkaṅ (Majjā dhātu)* or bone-marrow, and

(7) *Khu ba (Śukra* and *Ārtava)* or reproductive elements, namely sperm and ovum.

Dri ma

There are several types of excreta in the body Three of them are important. These are as follows:

(1) *Bśaṅ (Purīṣa)* or stool;

(2) *Gcin (Mūtra)* or urine; and

(3) *Rṅul (Sveda)* or sweat

Locations of Nes pas

All these three *Ñes pas* pervade all over the body including the nails and hair But for specific actions, they centre their activities in certain localities including tissues, sense organs and viscera *Rluṅ (vāyu doṣa)* generally resides in bones, ear, skin, heart including channels of circulation, and large intestine. *Mkhris pa (pitta doṣa)* is primarily located in blood, eyes, sweat glands, liver, gall-bladder, etc *Bad kan (kapha dosa)* is located in the remaining *lus zuṅs (dhātus)*, nose, tongue, urine, stool, lungs, spleen, kidneys, stomach and urinary bladder.

Divisions of Nes pas

Even though, *Ñes pas* are three in number, for the specific works they perform in the body, these are classified into five categories each as follows.

I Rluṅ (Vāyu dosa)

(a) *Srog dzin (Prāṇa vāyu):* It resides in the head and is responsible for deglutition and proper functioning of the sense organs.

(b) *Gyen rgyu (Udāna vāyu):* It is located in the throat and thoracic cavity. It helps in respiration, etc.

(c) *Khyab byad (Vyāna vāyu).* It resides in the heart and moves all over the body for proper functioning of the channels of circulation.

(d) *Me mñam (Samāna vāyu)·* It remains in the abdomen and regulates digestion.

(e) *Thur sel (Apāna vāyu)·* It is located in the pelvic region and controls urination, defecation, etc.

II Mkhris pa (Pitta doṣa)

(a) *'Ju byed (Pācaka pitta):* It is located in the stomach and is responsible for digestion of food and drinks.

(b) *Sgrub byed (Sādhaka pitta)* It is located in the heart and is responsible for mental activities

(c) *Mdaṅs sgyur (Rañjaka pitta)* It is located in the liver and helps in blood formation.

(d) *Mthon byed (Ālocaka pitta)·* It is located in the eyes and is responsible for good vision.

(e) *Mdog gsal (Bhrājaka pitta):* It is located in the skin and is responsible for imparting colour as well as complexion to the skin.

III Bad kan (Kapha doṣa)

(a) *Rten byed (Avalambaka kapha).* It is located in the heart and is responsible for regulating the circulation of fluids in the body.

(b) *Myag byed (Kledaka kapha):* It is located in the stomach and is responsible for reducing food into a paste form

(c) *Myon byed (Bodhaka kapha):* It is located in the tongue and is responsible for the perception of taste.

(d) *Tsin byed (Tarpaka kapha)·* It is located in the head and is responsible for proper functioning of sense organs.

(e) *'Byor byed (Ślesaka kapha)* · It is located in joints and is responsible for their movements.

Dons and Snods (Āśayas = Viscera)

The body has several viscera which perform important functions In Āyurvedic parlance, these are called *āśayas* In Tibetan medicine, these are classified into two categories, namely *Dons* or solid viscera and *Snods* (hollow viscera). The former are five in number and these are heart, liver, lungs, spleen and kidneys The hollow viscera are six in number and these are stomach, large intestine, small intestine, gall bladder, urinary bladder and reproductive organs

There is scanty information in the Āyurvedic texts about these solid and hollow viscera specially with reference to their anatomy, physiology and pathology. On the other hand, in Tibetan medicine, these details are available Single drugs and compound recipes for various types of afflictions of these viscera are available in Tibetan medical texts in great detail In Āyurvedic texts some of these organs are just mentioned by name without any detail As we know, original Āyurvedic texts are not available for the most part What is available, now, is only the redacted and supplemented forms of these texts Therefore, it is very difficult to explain the reason for which these important viscera did not receive the attention of the authors of Āyurvedic texts, which they eminently deserved Since some of the Āyurvedic texts, translated into Tibetan, contain these information, it is perhaps safe to draw the conclusion that the original Āyurvedic texts had such details Some quotations of *Carakasamhitā* extracted in the *Āyurvedasaukhyam* of *Ṭodarānanda* by Todarmal deal with pulse examination *(nādi-parīksā)* These references are not available in the extant editions of*Carakasaṃhitā* This justifies the observations made above This is however an important problem for research in future

Equilibrium of Nes pa gsum (Tridoṣa) and Lus zuns bdun (Saptadhātu)

The three *Ñes pas (dosas)* and seven *Lus zuṅs (dhātus)* remain in a state of dynamic equilibrim in the body for the maintenance of health of a person This state of equilibrium, if disturbed beyond a reasonable limit, causes diseases *(nad)* and death because the body of the individual becomes incapable of restoring their normalcy For this purpose, different types of drugs, diet and drinks are prescribed in the Tibetan medical texts Administration of these drugs, etc restores normalcy of *Ñes pas (dosas)*, etc and the patient recovers from the disease

Examination of the Patient

According to Tibetan medicine, the patient is examined by three different methods, namely (1) inspection *(darśana)*, (2) palpation *(sparśana)* and (3) interrogation *(praśna)* In this connection, pulse examination *(rtsa lta ba = nādī-parīksā)* and urine examination *(chu lta ba =-mūtra parīksā)* are conducted with meticulous care They examine pulse in several ways Like Āyurveda, they

examine pulse to ascertain the conditions of *ruln (vāyu), mkhris pa (pitta)* and *bad kan (kapha)* They examine pulse in both the hands of the patient In addition to these factors, they also examine the pulse to ascertain the conditions of different solid and hollow viscera in the body An expert physician of Tibetan medicine can, therefore, pinpoint the affected organ of the patient This enables them to decide upon the exact treatment needed by the patient. As mentioned before, Tibetan medical texts include description of different diseases of these viscera and their management in detail They also examine the pulse of the close relative of the patient and determine the latter's disease condition For successful pulse examination, the physician should be spiritually elevated, and both patient as well as the physicin should have purity and concentration of mind To enable the physicin to attain this state of the mind and spirituality, he generally practises certain religious rituals and recites incantations regularly.

In addition to pulse examination, the physician conducts urine, stool, tongue and eye examinations He also examines general physical features of the patient and various aspects of the disease before arriving at the diagnosis and selecting therapies

Selection of Drugs and Diet

As has been described before, the person suffers from diseases when there is any change (beyond a certain limit) in the equilibrium of *Ñes pas (dosas)* and *Lus zuns (dhātus)*. These are brought about by both physical, mental, external (like evil spirits) and climatic factors including *karma* (one's actions in the past life and in the earlier part of the present life) These factors bring about changes in the *Ñes pas* and *Lus zuns* by changing their composing basic elements, namely *sa (pṛthivī mahābhūta), chu (jala mahābhūta), me (agni mahābhūta)* and *rlun (vāyu mahābhūta)* To bring these *Ñes pas* and *Lun zuns* into their normal state, drugs and diet having appropriate basic elements are prescribed in addition to religious rituals to counteract the effects of evil spirits and *karma* (of past actions) (It is worth mentioning here that Tibetans have a strong faith in *karma* and they attribute all the good and bad happenings in this life to it) The physician, to select the proper drug and food ingredients, primarily depends upon their taste which are of six types The taste of these ingredients determine their mahābhautika composition as follows

(1) *Mnar ba (Madhura rasa)* or sweet taste indicates the predominance of *sa (pṛthivī mahābhūta)* and *chu (jala mahābhūta),*

(2) *Skyur ba (Amla rasa)* or sour taste indicates the predominace of *sa (pṛthvī mahābhūta)* and *me (agni mahābhūta),*

(3) *Lan tshwa ba (Lavaṇa rasa)* or saline taste indicates the predominance of *chu (jala mahābhūta)* and *me (agni mahābhūta);*

(4) *Kha ba (Tikta rasa)* or bitter taste indicates the predominance of *chu (jala mahābhūta)* and *rlun (vāyu mahābhūta),*

(5) *Tsha ba (Katu rasa)* or pungent taste indicates the predominance of *me (agni mahābhūta)* and *rlun (vāyu mahābhūta)*, and

(6) *Bska ba(Kasāya rasa)* or astringent taste indicates the predominance of *sa (pṛthivī mahābhūta)* and *rlun (vāyu mahbhūta)*

It will be seen from the above, that in Tibetan medicine the role of *ākāśa mahābhūta (nam mkha')* in giving rise to various types of tastes is completely ignored They have, thus not accepted the Āyurvedic view regarding *mahābhutika* composition of drugs with regard to *kha ba (tikta rasa) or* bitter taste.

Recipes and Pharmaceutical Methods

Thousands of recipes are described in Tibetan medical texts for the treatment of different diseases. Some of them, no doubt, bear a striking resemblance with Āyurvedic recipes. Number of Indian herbs are included in their materia medica Some of these drugs do not grow in Tibet, and therefore, they import them from India and other neighbouring countries In respect of some of these Indian drugs, they have discovered Tibetan substitutes For example, for saffron, they use the pistils of one of their local plants But in certain recipes, they invariably use the saffron of Kashmir and call it *kha che gur gum* In respect of some others, they totally depend upon substitutes growing in Tibet and they do not use original plants In Āyurveda, only one type of *katukā (Picrorhiza kurroa)* is generally used But in Tibetan medicine, several varieties of this drug called *hon len ser po, hon len mug po,* etc , are used. They claim better therapeutic results from these drugs In addition to Indian drugs and those described in Āyurveda, they use several of their local plants Most of these plants grow in high altitude in snow-clad mountain tops and are generally not available in India

Some poisonous drugs like aconite and nux-vomica are used in Tibetan medicine In the Tibetan medical texts these are prescribed to get them detoxicated before using in recipes But some physicians prefer to use them without purification or detoxication These are generally used in extremely small doses and many dos and don'ts are prescribed to avoid any untoward effect

Many animal products like musk, bear-bile, cow-bile *(gorocanā)* and different types of milk are used in Tibetan medicine

Some of their life-saving products contain gems, jewels and metals including minerals These metals etc , are generally purified (detoxicated) and made to calcined form *(bhasma)* before using in recipes In comparison to Āyurveda, Tibetan doctors use less of metallic preparations in their day to day practice

Recipes, during and after their preparation, are generally sanctified with prayers and recitation of mantras Such religious rituals are considered to enhance the potency of these preparations

Mostly, recipes are used in either powder or pill form But sometimes, medicated butter, medicated ghee, solid extracts, medicated alcohol and linctus are used by the Tibetan physicians

Specific Features

Tibetan medicine has the following significant features

(1) *Hoslistic System* Symptomatic treatment is alien to Tibetan medicine They consider the individual as a whole and examine the entire body, including the mind and the spirit before attempting treatment of any disease They consider every disease as a psycho-somatic entity and tieat both the body and mind simultaneously with the help of medicines, prayers, mantras and other religious rituals They try to eradicate the disease from the root and do not give emphasis upon the simple symptomatic relief

(2) *Emphasis on Prevention of Diseases* Even though, TIbetan medical texts describe treatment for several common as well as obstinate diseases (which are otherwise incurable), the emphasis in these texts is to keep the individual physically, mentally and spiritually healthy For the promotion of positive health and prevention of diseases several measures in the form of medicines, prayers and regimens are described. Religion, therefore, forms an essentiaal part of their medical practice

(3) *Field is more important than the Seed* In Tibetan medicine, germs as causative organism of several diseases have been described But these germs are considered to be only subsidiary causes, the primary cause being the equilibrium of *Ñes pas (dosas)* and *Lus zuṅs (dhātus)* If a person has harmony of these factors in the body, then the germ, howsoever powerful it may be, will not be able to produce any disease So they make efforts to make the body barren and thus unsuitable for the attack of germs If germs invade such an individual, then like seeds in a dry land, they die their natural death and become incapable of producing any disease Even for the treatment of an infective condition, they do not make much efforts to kill the germs On the other hand, they try to restore the balance of *Ñes pas* and *Lus zuns* by which the patient becomes free from the malady

(4) *Emphasis on Diet, Regimens and Prayers* In Tibetan medicine, more emphasis is laid upon proper diet, drinks, regimens and religious observances for the maintenance of positive health and prevention as well as cure of diseases Several categories of diet and drinks are described in Tibetan medicine Meat of several animals with special reference to their health-giving and disease-curing properties are described in Tibetan medical texts Different types of alcoholic drinks are also suggested by Tibetan doctors to their patients Prayers for the prevention and cure of different types of diseases are described in medical texts as well as religious scriptures

Conclusion

Like Āyurveda, TIbetan medicine is more a way of healthy living than a system of treatment of diseases It is inseparable from Buddhism It is a conglomeration of art, science and spirituality. Though considerably influenced by Āyurveda, they have developed many new concepts of health and disease and drugs including diet depending upon the special circumstances prevailing in Tibet It has centuries of experience behind it It is both history of medicine and medicine which is popularly followed now in Tibet, Bhutan, India and Mangolia In view of the abundant faith of Tibetans upon their traditional system of medicine, this can best be exploited for providing primary as well as tertiary health care to the people of this country Their materia medica is a repository of thousands of such lilfe-saving drugs as can successfully cure obstinate diseases for which no other treatment is available. In view of this, and in view of its universal approach, it is a boon to the entire suffering humanity.

13.2

INDO-ARAB RELATIONS IN MEDICAL SCIENCES

R.L. VERMA

Cultural and commercial relations of India with the Arab world date back to antiquity This can be ascertained from philological and other sources. The names of several Indian products such as Indian sword, Indian spices and aloes-wood are often seen even in pre-Islamic poetry Reference is also made to some of the Indian drugs in the holy *Qur'ān* and Prophet's traditions *(Ahādīth-i-Nabawī)* like Kāfūr *(Karpūra)* (76 5), Misk *(Muska)* (83.25), Zanjabīl *(Srngavera)* (76 17) and *'ūd (Agurū)* etc. According to Arab and Persian scholars some Arabic words like (1) ***Fānīz*** (2) ***Tūtia*** *(3) Nārjīl* (4) ***Bīsh*** and (5) ***Sandal*** have probably been derived from Sanskrit language.[1]

Some button-seals recovered from the island of Bahrain and other Persian Gulf islands are similar to the seals found in the Indus valley explorations It throws light on trade links between the protohistoric cities of Mesopotamia and Indus valley in the later half of the third millenium B C Evidence is also available from the old documents recovered from the excavations undertaken at Boghaz-Koyi, North-West Mesopotamia that the Mitannian and Hattite kings worshiped the Vedic gods as early as 1600 B.C A Bactrian document found in Kashmir proves that, in remote antiquity, India enjoyed a civilization in which medicine formed an important part.[2]

Abū Sa'īd, a companion of the Prophet, has related that an Indian Rajā had sent an earthen jar containing dried ginger *(Zanjabīl)* to the Prophet and he distributed it among all his companions to eat and that he also got a piece [3] Al Tabarī, the author of the first comprehensive Arabic book, entitled *'Firdaus-ul-Hikmat'* (Paradise of Wisdom) (c 850 A D mentioned "If a person takes seven pieces of ***Zanjabīl*** (dried ginger) in the form of jam, particularly prepared in honey, for seven days in a month for some time, he would be protected from phlegmatic ailments like paralysis, rheumatism, etc , it would also sooth the stomach.[4] It is a help in old age Due to its medicinal properties, its use is very common not only in food preparations but also in Ūnānī medicine and Āyurveda Muslim reports that the Prophet used to burn Aloes-wood *('Ūd-Hindi)* with camphor Said the Prophet. "In Aloes-wood, there are seven remedies" As a snuff, it is good for the disease called ***al-Ghudrah**** It is also efficacious for cases of pleurisy [5]

******al-Ghudrah* **means 'throat pain' The term is also applied to a stirring up of blood in the throat of a man which causes harm to the tissues of the tounge (tonsils)**



Arab Apothecary Shop (Park Davis Co)
(From the personal collection of Prof N H Keswani)

It is also recorded that several Indian tribes like Jats *(Zutt)* had settled down in Arabia even before the beginning of Islam Many if them were well-versed in different branches of ancient Indian traditional medicine, such as Tantric medicine, and were using their clinical proficiency to cure the patients Even some of the Indians are also said to have been in the company of the Prophet It is mentioned that one 'Āyesha Siddīqa, the beloved wife of the Prophet, fell sick and her nephews consulted an Indian *Jāt* physician of Medīna for her treatment He diagnosed that she is sick under the influence of evil spirits [6] It is also recorded that Hārith bin Kalada, the trusted Hakīm of the Prophet, studied in the medical school of Jundīshāpūr (in *Khūzistān*, in South-West Īrān) where Indian vaidyas and philosophers also taught sciences including the healing art At the end of his studies and before returning to Mecca, Ḥārith travelled through India in search of more information about different branches of Indian Medicine [7] It is also mentioned that an Indian physician, *Birzantīn Hindī* had migrated to Yemen and settled there presumably during *Anūsherwān's* reign (530-580 A D) He had a fair knowledge of Indian Medicine and specialized in treating different diseases by administering Indian herbs particularly hemp (Cannabis indica Linn) He is responsible for introducing Indian hemp for curing various ailments and got the name and fame due to new mode of treatment in that area [8]

It is narrated that a Chinese monarch sent a gift in the form of a book to *Mu'āwiya I*, the first Ummayyad Caliph (660-680 A D) The book was containing some secrets and wisdom regarding Indian Medicine, alchemy and astronomy The same book was received by his grand son Abū Hāshim Khālid bin Yazīd, who used to take keen interest in the acquisition of scientific knowledge from different nations. It is,

therefore, believed that in his compilations, he might have extracted and assimilated a considerable material on medical sciences and on other subjects of Indian origin [9] It is stated that after conquering Sindh, 'Abdullah bin Sawwār 'Abdī (667 A D), the Governor of Sind sent a number of rare and astonishing gifts to Mu'āwiya I on behalf of the Raja Gigān *(Qīqañ)*. Among those gifts, there was a piece of mirror Describing the qualities of that mirror, the learned men state that the mirror was sent by God to Adam after he was blessed with a large number of children on the earth The main feature of the mirror was that Adam could see in it the state of any of his children he wanted to see Later on, this mirror changed many hands and finally reached Banū Ābbās [10]

Similarly, in those days, the Indian hair dye *(al-Khidāb ul-Hindī)* was also exported to Arabia which was very popular with the Arabs due to its peculiar quality for retaining the bright dark texture of the hair for minimum period of about a year. It was also used by the Arab caliphs like Hāshim bin 'Abdu'l Malik (742 A D).[11] In this context, Al-Ṭabrī described thus one of his very astonishing observation: "An old woman aged 120 years used to live in my neighbourhood at Surra man Rā'a whose teeth grew again after had fallen out and her hair also turned into dark black colour. Many persons had told me about a wonderful thing for retaining black texture of hair for ever, quoting their ancestors According to them, the buccal sucking of one piece of black chibulic myrobalan of Kābul (famous Indian drug) daily, continupusly for one year was advised to retain permanent black texture of hair".[12]

All the 'Abbāsid caliphs from al-Mansūr (754-773 A D) to al-Mutawakkil (847-886 A D.) were patrons of arts and sciences Al-Mansūr, the second 'Abbāsid caliph was himself a scholar During his caliphate, he received embassies from Sindh, one of which included some Indian *pandits* who presented him two Indian books on astronomy, the *brahmasiddhānta* and the *khandakhādyaka*, which by the orders of the caliph were translated into Arabic by Ibrāhīm al-Fazārī (786-806 A D) with the assistance of these *pandits* who subsequently became the first astronomer of Islamic world Later, the famous Abū Mūsā J'afar Khwārazmī (c 850 A.D) based his astronomical tables on al-Fazārī's work and syncretized the Indian and Greek systems of astronomy, adding his own observations on the subject

Caliph Hārūn al-Rashīd's (763-809 A D) literary and scientific interest is also well known His love for learning further grew by the acquisition of a large number of books which he collected in his campaign in Asia Minir In order to preserve and make the best use of those books, he established his famous *Bait-ul-Hikmat* (House of wisdom), a combination of library academy and translation bureau which in many respects, proved to be the most important educational center since the foundation of the Alexandrian museum in the first half of the third century B C Upto this time sporadic translation work was done individually by Indians, Muslims, and Christian scholars etc Caliph Hārūn al-Rashīd and his immediate successors centralised the translation of books in the newly established academy When the Arabs realized the high quality and value of *Āyurveda* as well as Indian culture, they got interested in translation of Indian medical and other scientific works from Sanskrit into Arabic Thus works of *Caraka-samhita* and *Suśruta-samhitā* etc were rendered into Arabic. The Arabic

translation of these *samhitās* highly impressed the Arabs. Consequently, they assimilated an enormous material in their *Tibbī* compilations.

During 'Abbāsid period particularly in the reign of Caliph Hārūn al-Rashīd, the Barmecide (properly *Barmakī)* rose to the most influential position. The *'Barmak'* is an Arabicized form of the Sanskrit word '*Pramukha*' which was the title of high preist of the noted Buddhism temple of Nawbahār (Nava-vihāra) at Balkh (in Afghānistān) In fact, these Barmecides were the worthy descendants of the keeper or high priest (*Pramukha*) of the said temple who was skilful in Indian Medicine, astronomy and philosophy. As a physician Barmak's claim to fame is the pill which was named after him *(Habb-i-Barmakī)* It was recommended by Ibn Sīnā (980-1037 A D.) and later *Ḥakīms* and a perfume which was widely used by prostitutes.[13] According to a Sanskrit proverb, 'people follow their king', the scientific interest shown by the caliphs created fervour for arts and sciences in their courtiers and subjects Private individuals with good taste and means built up libraries of Indian, Greek and foreign texts and then took to translating these into Arabic. In this connection, the members of the '*Barmak*' family are well known particularly for their promotion and patronage on Indian sciences. Among the members of this family, the best known is Yahya bin Khālid, the Barmecide (c. 805 A.D.), the vizier of the Caliph Mahdī and the tutor of Hārūn al-Rashīd, sent an Arab scholar to India to study and bring the Indian drugs and herbs etc Yaḥya also invited Indian vaidyas and philosophers westwards so that he might learn from them He also advised the scholars to compose a book on Indian relion A reference was made to the anonymous book on Indian religious worship, sects and schools of thought, and moral ethics entitled "*Fīmilal al-hind wa-adyāniha*" which, with the exception of fragmentary information, was since lost It describes the temples, shrines and holy centres, wood, ebony and metal fixtures and the precious stones that decorate the idols Take for example, the large temple at *Mankīr (Mahānagara)* which was visited by the king once each year It housed a great twelve yard golden statue on a pedestal of gold, sheltered under a golden dome, and ornated with precious stones, emeralds, diamonds, blue sapphire, topaz, azure hyacinth, green corundum and the like To it Indians offered animal and even human sacrifies once every year Ibn Nadīm attributes a concise version of it to Ya'qūb bin Ishāq al-Kindī (c 872 A D) which was completed on the Muharram 863 A D The original copy of the report or book was prepared under the auspices of previously mentioned vizier, Yahya Barmakī [14]

His profound interest in Indian Medicine, religion, philosophy and literature may be judged by this historical fact that one day an Indian poet came to his court and recited the Hindi couplet Yahya was pleased and awarded him one thousand *dīnārs* Barmecide's generosity is proverbial Even today in all Arabic speaking lands the word '*Barmakī*' is used as a synonym of 'generous' and as 'munificient as Ja'far' is simile that is understood everywhere in Arab countries [15]

Besides the Barmecide's interest and influence in the court, there were also many other resons which helped them in attaining to their objectives For example, it has been stated in the '*Kitāb Akhbār al-Khulfā' wa'l-Barmaka*' that once Hārūn al-Rashīd was afflicted with a serious disease and although his physicins (including Jibrīl bin Bakhtishū', the Caliph's personal Ūnānī physicin) treated him yet he could not be

cured. Then on the recommendation of one of his courtiers, Abū 'Amrū al-'Ajamī, Hārūn sent for Manaka (Mankha or Mānikya) with precious gifts He came to Baghdad and cured the Royal patient and consequently, the caliph granted him handsome pension and bestowed upon him the great wealth.

After this Ibn Abiī Uṣaybi'a relates a story about Manaka who saw a quack in Baghdad while he was describing one of his patent medicines that could cure all kinds of diseases When the interpreter explained to Manaka as to what the drug peddler was saying, the Indian vaidya (Manaka) remarked that Arab Caliph was a fool to invite him from India when such competent physicins were already present here If the man was a quack, Manaka wondered why was he not put to death as this punishment would stop the death of a large number of people due to the use of the medicine which he was selling [16]

1 Manaka was very skilful in Āyurveda and other Indian sciences He was one of the distinguished philosophers of India He had a sound knowledge of Indian and Persian languages He was deputed as Chief of the Royal Hospital at Baghdad and translated several books from Sanskrit into Persian or Arabic language which would be mentioned later.

2. Ibn Dhan (Dhanya or short form of Dhanvantari?) was another competent Indian vaidya who lived at Baghdad at the same time when Manaka was there He was called there by Yahya bin *Khālid,* the Barmecid vizier and was appointed as the Director of his (Barmecid) hospital at Baghdad At his behest, Ibn Dhan also rendered a few Sanskrit texts into Persian or Arabic language [17]

3. Sāleh bin Behla A third skilful practitioner of Āyurveda was Ṣāleh son of Behla (Bhela?) He lived at Baghdad during the caliphate of Hārūn al-Rashīd but he does not appear to have held any official position, nor is he credited with the translation af any Indian medical work into Persian or Arabic Like his father, Behla, he was probably a well-known private practitioner of Āyurveda in the metropolis of Islām.[18] His father, Behla, and son, Hasan, also got name and fame as well experienced Āyurvedic practitioners at Baghdad during those days This chapter of Ibn abī Usaybi'a's *'Uyūn ul-Anbā fī Tabaqāt il-Atibbā'* ends with a long story* as to how Sāleh bin Behla cured Ibrāhīm, a cousin of the Caliph Hārūn al-Rashīd from apoplexy *(Saktah)*** when Jibrīl, his court physician had predicted imminent death of the patient The brief summary of the chapter is reproduced here to show the clinic sagacity of the Indian vaidya, Sāleh*** at Baghdad in those days

**This episode is given at length by al-Qiftī in his 'Tārīkh-ul-Hukamā' on the authority of one Abū Salama, a courtier of Caliph Hārūn al-Rashīd who was an eye-witness to the whole scene from beginning to end It has also been described in Ibn abī Usaybia's 'Uyūn ul-Anbā fī Tabaqāt il-Atibbā' in the chapter dealing with the account of physicians and philosophers of India*

***Some of the historians mentioned that Ibrāhīm was suffering from apoplexy (Saktah) not by epilepsy (Sar') which is correct From the signs and symptoms of the royal patient, I am personally inclined to believe that Ibrāhīm got a sudden attack of apoplexy (Saktah) as already stated by some of the scholars*

****Elgood in his 'Medical History of Persia and Eastern Caliphate', Cambridge (1957) stated that the name of this Indian vaidya was Sāleh bin Nahla, but it is based on wrong Arabic text or may be due to some printing mistake Moreover, Ibrāhīm was married with the favourite sister, 'Abbāsa of Hārūn al-Rashīd and not with the daughter of Hārun al-Rashīd as mentioned by Elgood*

Ibrāhīm bin Sāleh who was a cousin of Caliph Hārūn al-Rashīd, was suffering from apoplexy *(Saktah)*, the court physician, Jibrīl medically examined him and declared that the patient was sure to die within a few hours The caliph was much upset at the news and gave up his food, wept and lamented Then Ja'far bin Yahya, the favourite Barmecide minister of the caliph (exec 803 A D) suggested that Sāleh bin Behla who was a well-versed in the science of Āyurveda be called Sāleh examined the patient and reported to the caliph that the patient would never die by the present ailment Sāleh said with confidence that he would hold himself responsible, if the patient died of this trouble. Soon after, the news of the death of Ibrāhīm came and preparations were being made for his burial in the presence of the caliph and the courtiers including Sāleh bin Behla. Hārūn al-Rashīd flew into a rage and turned to the minister Ja'far bin Yahya in royal consternation and cried out, "Where is Sāleh, that new discovery of years, O Ja'far and forthwith denounced Indians and their medical science" Sāleh bin Behla, the Indian physician protested against these remarks He affirmed with complete confidence that he was ready to demonstrate to the caliph that the patient was alive and he could cure him then and there. He actually demonstrated that Ibrāhiīm was still living by pricking a needle in his left thumb at which the patient withdrew his hand. After this demonstration and at the advice of Sāleh, the royal patient was removed out of his coffin, bathed and put him in his usual dress Then the Indian vaidya ordered to bring a blowing pipe and blew some snuff prepared of *Kundush* (Verartilum Album) with the instrument into his nose After about ten minutes, all of a sudden, his body quivered and he sneezed, sat in front of the caliph and kissed his hands The caliph was much impressed by the clinical acumen of Indian doctor and awarded him handsomely.[19]

4. Dūbān was the last and fourth Indian vaidya who was mentioned by Maulānā Shilī Nu'mānī, the well-known Indian orientalist, in one of his scholarly monographs entitled *'Al-Ma'mūn'*. Dūbān, the Indian learned vaidya, was sent by an Indian Rāja to the court of Caliph al-Ma'mūn at Baghdad It seems that tha vaidya was an ardent scholar and wielded great influence in the Indian court as is evident from the letter written by Indian Raja to the caliph After reaching Baghdad, Dūbān requested the caliph to bring the wooden box which was lying buried in the Nausherwān's palace *(Iīwān-i-Kisrā)*. When it was brought and opened, there was a rare and most precious book composed by the Nausherwān's minister (presumably Burzoe) It was concealed in it by wrapping in a piece of specific cloth called *'Dībā'*. When the translation of the contents of the book made by the Indian vaidya was heard by the Caliph al-Ma'mūn, he was highly impressed by the subject, style of writing as well as presentation Caliph al-Ma'mūn addressed Fadl bin Sahl, "By God, it is called discourse*(Kalām)* not what we talk" [20]

It may be concluded from the above statement that Burzoe, the well-known minister of Nausherwān (530-580 A D) came to India at the command of his king to collect more information on Indian arts and science Accordingly, he brought Indian scientists particularly experts of Āyurveda alongwith the books on differnt subjects of India Most of them were deputed to impart Indian medical education Other scholars were appointed for rendering scientific books in*Pehlavī* language in the medical academy and translation bureau of Jundīshāpūr But, unfortunately, the details are not

available in this regard. Presumably, the book mentioned above was also composed by Burzoe, himself.

Beside the abovementioned four well-known Indian vaidyas there must have been several other Indian medical men at Baghdad, but no information is available about them But the Arab scholars were also acquainted with some other Indian vaidyas and masters of other allied sciences who have been described by some Arab chroniclers These are·

I *Kanka* (Gaṅgā) was one of the most learned Indian philosophers of ancient time. He had also insight in the healing art and drug sciences He was a highly qualified astronomer According to some Arab writers, Kanka was unanimously accepted by all the Indian savants to be the greatest authority in astronomy in ancient India. The following works are assigned to him.

(a) *Kitāb-ul Namūdār fīl-'Amār* (The book of horoscopes of lives)

(b) *Kitāb-ul Asrāri'l-Mawālīd* (The books of the secrets of births.)

(c) *Kitab-ul Qirānāt* (The book of conjuctions)
(*Kabīr wa Saghīr*) Major and Minor)

(d) *Kitāb fī 'Ilm-ul-Ṭibb* (The book on medical science)

(e) *Kitāb fī'l-Tawahhum* (The book on mania)

(f) *Kitāb fī'l Ahdāthu-'Ālamii fī'l-Qirān* (The book on the incidents that may happen in the world under certain conjunctions of stars)

II *Sanjhal* was the most learned man of India He wrote a book on nativity entitled *Kitāb-ul-Mawālīd* (book of nativities)

III *Shānāq* (Cānakya) was one of the ablest vaidyas of India He had versatile knowledge of various branches of science and philosophy He excelled in astronomy and was good cogent and eloquent He occupied a high position in the courts of Indian kings of his time Shānāq al-Hindī is to be identified as Cinakya, Candragupta's minister, called also Kautilya, the author of *Arthāśāstra* According to Ibn, Nadīm, he wrote about both warfare and ethics which means that the contents of *Arthaśāstra* were vaguely known to him It is known to have been translated into Persian from an Indian language by Manka Then, it was rendered into Arabic from the Persian by Abū Hātim (9th cent A D.). Brockelmann gives the Arabic title variously as (a) *Kitāb al-Shānāq fiī al-Sumūm wal-Tiryāq*, (b) *Kitāb al-Sumūm wa'l-Tiryāq* and (c) *Al-Sumūm wa daf' Madārrha* on its three copies known to him However, what is one of the earliest mentions of him is made in Ibn Wahshiya's book on Poisons (c 950 A D) He refers to Shānāq's book as great and important This statement is attested by the fact that much of *Sh*ānāq's work was used by Ibn Wahshiya It was not, however, a base upon which the latter's work was built, as has been claimed by some authors

Shānāq was known to be author of the *Fihrist*, Ibn al-Nadīm, and also of other books on the conduct of life, the management of war, and on cultural studies His works mentioned by Ibn abī Usaibi'ya are on the stars, a lapidary, and one on veterinary medicine

Abū Ḥātim of Balkh who translated books from Persian into Arabic is known only as a contemporary of Manaka and a translator who worked for Yahya bin Khālid, the Barmecide. Another translation of Shānāq's work was carried out by al-'Abbās ibn Sa'īd al-Jauharii, a contemporary of al-Ma'mūn, and a well-known Islamic astronomer and commentator on the Elements of Euclid. In so far as its content is concerned, this resembles very much to *Suśruta-samhitā* in a somewhat different order. Shānāq divided his book into five chapters [21]

1. On the poison-maiden, the upsetting of the humoral balance in the body by poisons in the form of food, drink, clothing, perfumery and washing media

2. Poison In raw and cooked food, drinks, fruit-juice, conserved fruits, perfumes, salves, aromatic and washing waters, apparel of various materials, and drugs Symptoms due to poisoned matter and its properties

3. Twelve recipes of animal poisons in food and drink frfom the swallow, *saṭūqā* (?), salamander, blood of various animals, leopard and other kinds of gall, chameleon, heart and tongue of a raven and frog, universal antidote, seal-ring poison for suicide

4 Remedies for young swallow, leopard gall, chameleon and others

5 Recipes for poisonous salves, wash water and clothes



Caliph Harun al-Rashid alongwith his court physicians
(From the personal collection of Prof N H Keshwani)

II *Kitāb-ul-Baytār* (Book on veterinary science)

III The Book on astronomy

IV. *Muntahalu'l-Jauhar* (The essence of reality), it was composed for one of the Indian kings of his time who called himself as the descendant of Cumanus (Kumānusa?). In fact, the book was compiled for the guidance of the kings. The king (Ibn Qamanūs), the Indian, could not be indentified because his name was illegible.

V. *Jaudhara* (Yaśodhara) was one of distinguished philosophers and learned men of India. He had a fair knowledge of medical science and had compiled several books on different scientific subjects. One of these books is the-*Kitāb ul-Mawālīd* (Book of nativities).

In addition to the above ancient Indian authors, the names of ten other savants have been mentioned by Ibn Nadīm and Ibn abi Usaibi'ya, but it is not possible to establilsh their identify correctly The following names of the Indian scientists have been mentioned by Ibn Nadīm and Ibn abi Usaibi'ya (1) Bākhar (2) Rāha (or Raja) (3) Dāhir (4) Saka (5) Aikab (6) Zankal (7) Jabāri (8) Indī (9) Jahar (10) Ankū (11) Manjhal Qāzī Athar Mubārakpūrī has further added these names: (1) Vaidya Behla (2) Qalbarqal (3) Khātif Hindiī They were also invited by Yahya bin Khālid, the Barmecide during Hārūn al-Rashiīd's time Moreover, he also added these names in the above list: (1) Ausa (2) Bādhrud Ghughia (3) Bājhar (4) Tuaqshtal (5) Jaraka (6) Dabak (7) Rāi Hindī (8) Sīrak (9) Samūr (10) Nahaq (11) Nāqil Hindiī (12) Sasa [22]

The following Indian medical works were rendered into Arabic from Sanskrit or Hindi during Abbasid Caliphate.

(1) *Caraka-samhitā* was translated into Persian (Pehlavi) probably by Manaka Hindi and then it was rendered into Arabic by 'Abdulla bin Ali Its Arabic translation is very defective as stated by al-Bīrūnī himself

(2) *Suśruta-samhitā (Susrūd)* was rendered into Arabic by Manaka Hindī at the command of Yahya bin Khālid, the Barmecide It consists of ten discourses A copy of the Arabic translation was kept by Yahya in his personal collection

(3) *Aṣṭāngahṛdaya (Astankar)* was rendered into Arabic by Ibn Dhan

(4) *Nidāna (Nidāna)* The name of the translator is not known It has an account of symptoms of 404 diseases (and does not have the methods of their treatment)

(5) *Sindhastaq* or *Sindhshan (Siddhayoga?)* In the words of Ibn Nadīm, it means *Safwat-ul-Nujh** i e 'Purity of success' which is the Arabic translation of *Siddhayoga* (Elixir of success) It was translated into Arabic by Ibn Dhan

*The word has been wrongly given in "*Tabaqāt-ul-Atibbā*" as *Sūrat yl-Nujh* (ways of success)

(6) *Kitāb-ul-Sumūm* (Book of Poisons) of al-S͟hānāq al-Hindi comprised of five discourses. It was rendered into Persian *(Pehlavi)* from Sanskrit by an Indian vaidya, Manaka at the behest of Yahya bin K͟hālid and was retranslated into Arabic by Abū Hātim al-Balk͟hī around 800 A D About two decades later, another Arabic translation of this work was carried out by al-'Abbās bin Sa'īd al-Jauharī for his generous patron Caliph al-Ma'mūn who ordered certain adjustment in the text It is mentioned in the introduction of the Arabic translation that this "most valuable manual which was transmitted by the ancient sages as a trust and a confidential document is very important and unique Kings hid it in their secret treasure boxes and kept it out of the reach of attendants, bosom companions, relatives and even from members of their own families" In addition, there is mention of a 'universal *theriac*' called '*Kandāhstah*' in Arabic, apparently a distorted transliteration from the Sanskrit This theriac comprises over thirty ingredients including such simples as cinnamon, clove, Indian malabathrum and nard, melilot, red sandalwood, lemongrass, saffron, ginger, turmeric and arsenic According to al-S͟hānāq Hindī, whosover takes regular doses of this recipe for one year without interruption, no poison or venom, however strong it may be, whether from animal bites, deadly foods or dangerous drugs would ever harm him".[23]

(7) *Kitāb 'Ilājāt al-Hibālī lil-Hind* (The book on the treatment of pregnant women in India)

(8) *Kitāb Rūsa al-Hindya fī 'Ilājāt ul-Nisā'* (The book on the treatment of women's diseases) by Rusa, the lady physician of an Indian Brahmin family.

(9) *Kitāb Muk͟htasar lil Hind fil-'Aqāqīr* (A short treatise on herbal drugs of India)

(10) *Kitāb fī Ajnās ul-Hayyāt wal-Sumūmhā* by Rāi Hindī It deals with the views of Indian people about various kinds of snakes and some incantations and *mantras* considered to be tested cure of snake-bite Al-Jāhiẓ states that Indian vaidyas also cured the patients of snake-venom by reciting *mantrās* It may be pointed out that the Greeks and Muslims also learnt this from the Indian and some of the Muslims surpassed the Indians in this science as is evident from the historical statement

While describing the excess of snakes in *Kolommili* (Mysore), Mas'ūdi in his *'Ajā'ib ul-Hind*, has quoted the captain of a ship to have met a Muslim who knew the charms *(mantras)* against snake-bite He further added that other persons of that locality or area had fair knowledge of the subject, but the *mantras* recited by him were most effective and proved as an antidote against snake-venom Many patients of snake-bite used to consult him and got cured by his spiritual treatment [24]

(11) *Kitāb Tuqashtal fīhi Ma't Dā'un wa Ma't Dawāu'n*. The book deals with one hundred diseases and hundred medicaments by Tuqashtal Hindi

(12) *Kitāb ul-Sukr al-Hind*: (the book on intoxicants in India composed by an Indian vaidya).

(13) *Kitāb ul-Tāsīr Asmā' ul-'Aqāqīr bi Asmā' 'Ashrah*: (the book deals with the names of drugs in ten different languages)

(14) *Kitab ul-Tawahhum fil Amrad wal-Ilal*: (the book deals with the effect of mania in different diseases and infirmities) by Tuqasthal

(15) *Kitāb fī mā ikhtalafa fīhi al-Hind wa'l-Rome min al-hār, wa'l-Bārid* (The book of the drugs about their nature and properties in which the Indians and Greeks differ).

It is noteworthy that Caliph Hārun al-Rashīd used to get a rich income from taxes imposed on various kinds of Indian articles including spices and drugs. After Hārūn's death, a complete list of gifts and articles was prepared from royal store-room or treasury 1000 baskets of Indian aloe-wood was specially mentioned in the list It is also stated that an Indian Raja sent a studded stick of emerald *(Zamurrud)* about one meter long to Caliph Hārūn al-Rashīd. Its top was in the shape of a beautiful and delicate sparrow made of red rubiles. The stick was liked and much appreciated by the caliph who presented it to his wife, Zubaida

Caliph al-Ma'mūn (813-33 A D) was also interested in different sciences. So he brought many scientists to his court from Jundīshāpūr which had a large number of Indian scientists who had brought their sciences and wisdom from Indian subcontinent. Caliph al-M'amūn appointed Ghasān bin 'Abbād as the governor *(Amīr)* of Sindh, who had taken with him his personal physician named Ibrāhiīm bin Fazārūn, famous for his knowledge of medicine in Baghdad.[25] It is presumed that after his return from India, Ibrāhiīm bin Fazārūn must have brought a lot of information about Indian drugs and *Āyurveda*, its teaching and texts but its details are not available in the present historical works

Among the gifts sent by Indian Rājas to the Caliph al-Ma'mūn, there was a special mat made of dragon's skin, which when used for sleeping or sitting purpose, was supposed to prevent and cure pulmonary tuberculosis or phthisis. Mas'ūdī, the author of *Akhbār-ul-Zamān* stated about the islands of a sea in Southern part of India, thus:

"A dragon named *Malaka* is found here which is rarely seen, perhaps once a year. It can swallow an elephant Raja of Zanj procure it with great skill, cleverness and trick It is boiled to get its fat The body of the Raja was massaged with it which increases its strength and other powers (sexual etc) Its skin resembles the leopard skin and used for preparing special mat It is said that a patient of phthisis gets cured if he sits on it for seven days continuously and if a healthy man sits or sleeps on it, he becomes immune from this disease" [26]

As already stated earlier, another Indian Raja sent his favourite vaidya named Dūbān to the court of al-Ma'mūn It may be added here that Indian Rājas used to send rare and wonderful Indian gifts to Arab caliphs from Hārūn al-Rashīd to al-Mutawakkil These gifts consisted of aloewood, musk, camphor, dried ginger,

kostos, amber, fresh myrobalan of Kābul and precious stones apart from other articles of non-medical interest such as special prayer-mat, its pillows made of special bird's feathers (wings) named *Samandal*. Its main and peculiar quality was that it remained unaffected by fire

Firdaus-ul-Hikmat (Paradise of wisdom) was composed by Abū 'Alī bin Rabban al-Tabarī (c. 850 A D.). Al-Tabarī has divided the book into a number of discourses which are again subdivided into different chapters The first, second and third discourses of the seventh part deal with climate, waters and winds with cosmography and astronomy and with the utility of the healing art Its last and fourth discourse has discussed the different branches of ancient-Indian medicine (Tibb-i-Vaidik) and is in 36 chapters. Its first chapter starts with the genesis of Ayurvedic medicine as follows:-

فردوس الحكمة

في الطب

لابي الحسن علي بن سهل ربن الطبري

قد اعتنى بنسخه وتصحيحه

من نسخة برلين والمورة البريطانية وعوتا ونسخة حكيم خواجه كمال الدين

الدكتور محمد زبير الصديقي

مدير الشعبة العربية بجامعة لكنو

وانفق

اوقاف ئي حي عب في طبعه مائة ليرة

وطبع

في مطبع «آفتاب» الكائن برلين

سنة ١٩٢٨ ء.

Title page of Al-Tabari's Firdaus-ul-Hikmat (Arabic)
The first comprehensive Arabic treatise which contains the description of Āyurveda

"When I was about to complete this book, I thought it fit to add another discourse to it, with separate chapters describing the merits of medical works of Indian and their reputed medicaments. I hope it will increase the knowledge of the student because when he comes to know where these two great nations·(Greeks and Indians) agree and where they differ, he will naturally come to know the advantages and disadvantages of Hindu medicine Out of these topics which I have written here very many things agree with what the Greek *Hakī* have mentioned, but most of the things do not I do not know what evidences they had for their theories. Therefore, I would request the learned reader wherever he comes across a good thing or wherever he thinks it correct, to accept it, otherwise he may reject it. In this discourse *(maqālah)*, I have collected the short sentences and good things from the science of the nation, which I got from the *Caraka-Saṃhita, Sushruta Saṃhita, Nedan* and *Ashtangahridaya*" [27]

Regarding the origin and transmission of Ayurvedic medicine, Al-Ṭabarī further adds.

"They say that, in remote antiquity, the earth was always bright, fertile, clean and its five fundamental sources or elements i e *Mahabhuta's* natures were moderate. These were counted as five, with the addition of a kind of air, i e Ether *(Ākāsh)* to the other four, namely (1) Earth (2) Water (3) Air and (4) Fire The people lived in harmony and love with each other They had no greed, anger, jealousy or anything else which made their body and soul sick But, later on, when jealousy arose among them, greed came, when they became greedy, they needed to find out the tricks and means to hoard up the riches, and easy for some of them, grievances, scheming, weariness, causing pain to others, corrupted the community Consequently sin and wickedness spread, natural resources changed for the worst, disease took root These evil ways prevented them from their duty to God and stopped them from cultivating arts and sciences and they became illiterate. Therefore, the learned and pious men of the time went to their great sage *(Prajapati)* and requested him to pray to God with them So he ascended the peak of a mountain, cried and prayed to God for a long time and begged him to *(Brahma)* taught him medical science These lines are written in *Charaka Samhita* But Sushruta says that Dhemeetra (Devendra) learnt the medical science from a *Brahman* who got it from God *(Brahma)* through revelation" [28]

Al-Tabari's account is ambiguous and misleading on the subject which does not correspond or tally with the modern texts of *Caraka-samhitā* This may be due to the fact that Al-Tabari's studies were presumably based upon the defective Arabic translation of *Caraka-saṃhitā* by 'Alī bin Zain of Tabaristān rendered during the days of Caliph Hārūn al-Rashīd According to original Āyurvedic texts, Brahmā, the first propounder of *Āyurveda*, it is recorded, propagated this science through Daksa Prajāpati who, in turn, taught Āyurveda to the legendary Aśvins-the celestial physicians to the gods The Aśvins imparted the science of *Āyurveda* to Indra, the Chief of gods in heaven who is supposed to have transmitted the same to the mortal sages The Ātreya School of Medicine believes that the first mortal who received the Āyurvedic Medicine was Bharadvāja, and according to Dhānvantarīya School of Surgery, considers Kāśirāja Divodāsa Dhanvantari as the first person to be favoured with this



المقالة الرابعة من جوامع كتب الهند وهي ستة وثلثون باباً.

الباب الاول منها

في علة الطب.

قد رأيت عند انتهائي الى آخر الكتاب ان اذكر في مقالة واحدة ابواباً من محاسن كتب الهند في الطب وافضل ادويتهم ورجوت ان يكون ذلك زائداً في علم المتعلم لانه اذا عرف ما اتفق واختلف فيه هاتان الامتان العظيمتان تفتق به وتخرج بمعرفته واستعماله ، وفيما كتبت اشياء كثيرة موافقة لقول فلاسفة الروم واشياء مخالفة لهم لا اعرف حجتهم فيها فمهما وجد القاري فيه من قول حسن او رأى صواب فليقبله وليطرح ما خالفه فقد جمعت فيه جملاً موجزةً و عيونا من علم القوم ، جمعتها من كتاب جرك وكتاب سسرد ونداں واشتانقهردي.

قالوا ان الارض لم تزل في قديم الدهر برةً خصبةً سليمةً والمهابوت الخمسة معتدلة ، يعني بالمهابوت الطبائع وجعلوها خمسةً بالريح وكان الناس متحابين متوافقين لا حرص فيهم ولا تباغض ولا حسد ولا غير ذلك مما يسقم الابدان والنفس ، فلما دخل الحسد جاء بعقبه الحرص فلما حرصوا احتاجوا الى الاجتهاد في الجمع فلما اشتد على بعضهم الجمع وسهل على بعض دخلت لذلك الهموم والفكر والتعب والنصب والتغالب والحرب والمخادعات والكذب ففشت الذنوب عند ذلك وتغيرت المهابوت ودخلت الاسقام وشغلتهم هذه الخصال عن عبادة الله واحياء العلم واستحكم بذلك الجهل فاجتمع العلماء والصلحاء الى ناسكهم فوسريوا طرى(١) وسألوه

(١) (فراطامطي)

The fourth discourse of Firdaus-ul-Hikmat which deals with Āyurvedic Medicine

knowledge from the gods. But, South Indian traditions credit Rṣi Agastya — popularly known as Kundamalai Siddhar, with being the first mortal to receive Āyurvedic science from the gods.

Among the simple and compound medicaments, al-Ṭabarī described (1) *Jauz Hindī* (cononut) (2) *Tamar Hindī* (tamarind) (3) *'Ūd Hindī* (aloewood) (4) *Mileh Hindī* (Indians salt) (5) *Kammūn Hindī* (Indian cumin) (6) *Shītraj Hindī* (Indian lepidium) (7) *Qust Hindī* (costus Indica) (8) *Halelaj* (chebulic myrobalan) (9) *Balalaj* (belleric myrobalan) (10) *Āmlaj* (Emblic myrobalan) (11) *Sādhij Hindi* (malabathrum Indica) etc. Similarly, he also described (1) *Dawā' Hindī* (two prescriptions) (2) *Atrīfal Kabīr* (3) *Jawārish Hindī* (4) *Hirq-ul-Faulād* (5) *Hirq-ul-Fiddat* (6) *Hirq-ul-Dhahab* (calces (bhasma) of iron, silver and gold) apart from other medicaments of Indian origin It is presumed that this is the first Arabic comprehensive book which contains the description of Āyurvedic medicine alongwith mode of calces preparation of different metals. Another prescription used for improving memory is. some pieces of *al-Wajj (Vacā,* calamus Asiaticus) be dipped in cow butter-oil in a green container for some time and then burried in a heap of barley for not less than twenty days. The medicine thus prepared should be taken in dose of one small piece daily. According to an Indian scholar, a member of his family used it for some time and his memory was so sharpened that he recollected those incidents of his life which had happened fifty years ago and were forgotton by him

In addition to references to Shānāq, abstracts from other Indian books on poisons were borrowed and assimilated by Ibn Wahashiya (9th cent. A.D) in his Arabic text, entitled *Kitāb ul-Sumūm wa'l-Tiryāqāt* (book of poisons and their antidotes) Reference i also made to two Indian experts on the subject, Tammashah and Bahlindad and their medical treatises, in his Arabic work Another Indian vaidya, called Bai, Nai or Tai, depending on the missing dots is mentioned in the medical literature, but his treatise is not extant now-a-days [29]

Abū Bakr Muḥammad bin Zakariyā al-Rāzī (850-923 A D.), the well-known and distinguished pupil of al-Tabarī, also quoted the Indian Āyurvedic works in many of his medical treatises particularly in his *al-Hāwī* Ibn abī Usaybi'a reported that he found in *al-Hāwī* and other monographs of al-Rāzī quotations from the following Indian texts. (1) *Charaka-samhita* (2) Sushruta-samhita (3) *Ashtanghridaya* (4) *Nidana* (5) *Siddhayoga* (6) *Kitāb Mukhtasar lil Hind fī'l-Aqāqīr* (7) *Kitāb ul-Sukr lil Hind* (8) *Kitāb Rāi'l Hind fī Ajnās-ul-Hayyāt wal Sumūmha* (9) *Kitāb ul-Tawahhum fil Amrāḍ wál 'Ilāl li Tuqashtal Hindī (10) Kitab Ilājāt al-Ḥibālī lil-Hind (11) Kitāb Rusa al-Hindya fī' 'Ilājāt-ul Nisā' (12) Kitāb Tuqashtal fīhi Mi'at Dā'un wa Mi'at Dawā' (13) Kitāb fī mā ikhtalafa fīhi al-Hind wa'l Rome min al-Hārr wa'l-Bārid.*[30]

Ibn Sīnā (980-1037 A D), the Prince of Physicians, wrote Canon of medicine *(al-Qānūn-fīl-Ṭibb)* which has been used for the centuries as the authoritative text on Ūnānī medicine. It is comprised of five parts In this text, Ibn Sīnā acknowledges his indebtedness to the Indian doctors and quotes verbatim from Āyurvedic treatises on leeches and combination of various articles of food He describes thus

(a) Undesirable combination of foods According to research scholars of India and other places, sour things and fish are not be taken with milk, otherwise various types of diseases including leprosy* may occur In their opinion, curd should not be taken with radish or bird's meat and flour of roasted barley** with milk and rice Similarly, fat and oil stored in copper utensil should not be used for cooking purpose. *Kabābs* barbecued on charcoal of castor-wood should not be eaten

(b) According to Indian vaidyas, some leeches are poisonous Leeches with large heads and black, grey or green colour should be avoided. Hairy bodies, eel-like appearance, blue stripes and chameleon colour are all signs of the leeches being poisonous Leeches of this type produce inflammation, hemorrhage, fever, syncope, paralysis and intractable ulcers. Leeches brought up in dirty water should also be avoided.[31]

Ibn Sīnā described about 792 simple drugs in his *al-Qānūn* Among these nearly 49 have been stated as of Indian origin Out of these Avicenna designated several drugs i.e *Osbed, Bal, Halbeel, Darkeesa, Shull, Fall* and *Hasht-dahn* as Indian but now their identity can not be ascertained Besides these, there are some other drugs which are described as Indian in Ūnānī *(Ṭibbī)* books but the passage of time has masked their identity and now we do not know which of them were so designated In the fifth (5th) part of the Canon *(Qarābādīn-i-Qānūn),* Ibn Sīnā described about twenty-five (25) compound medicaments of Indian origin

In *Kitāb ul-Saīdana fi'l-Ṭibb* (Book of Pharmacology in medical science), Abū Rayhān al-Bīrūnī (973-c 1051 A D.) referred to the skill and wisdom of the Indian physicians and the marvellous cures which they achieved by administering aconite to cases of haemorrhoids and this is evident from an anecdote narrated by the master himself He recalled how an eminent citizen of Gardīz (South-east of Ghaznah in Afghānistān) told the following story

'The father of this eminent citizen was inflicted with painful haemorrhoids He consulted most of the physicians in the area, but all their treatment was of no avail Then an Indian medical practitioner, among these toxicologists, examined him and claimed that he can cure the afflicted patient Thereupon, his son asked this physician, how much his fees would be and how he will go about it? "There will be no charges", the physician responded, "until your father is completely healed Only then you will pay me what you feel right and compensatory" "What are you going to use for cure, surgery or cauterization?" the son asked The Indian physician answered, "None of these . . " Removing the patient's clothes, he uncovered the region at the groins and above the kidneys, making a small incision with his lancet and rubbing it with Indian aconite till blood squeezed out He also recited the usual incantations, and gave the patient a small dose of the aconite to drink Thereupon the patient fainted and was left to recover. Thereafter the physician waited for few days till the incision healed He then

*In the Indian folklore, it is leucoderma rather than leprosy These names are, however, often used synonymously

**Sawīq known as Sattū in Indian subcontinent

(٨٥)

وشهرين فى العرض وهى اكبر ارض الله جبالاً وانهاراً وقد اختصت بكريم
النبات وعجيب الحيوان ويحمل منها كل طرفة الى سائر البلاد مع ان التجار لا
يصلون الا الى اوائلها واما اقصاها فقل ما يصل اليها اهل بلادنا لانهم كفار
يستبيحون النفس والمال، والهند والسند كانا اخوين من ولد توفير بن
يقطن بن حام بن نوح عم وهم اهل ملل مختلفة منهم من يقول بالخالق دون
النبى وهم البراهمة ومنهم من لا يقول بهما ومنهم من يعبد الصنم ومنهم من يعبد
القمر ومنهم من يعبد النار ومنهم من يبيح الزناء بها من المعدنيات جواهر
نفيسة ومن النبات اشياء غريبة ومن الحيوانات حيوانات عجيبة ومن العمارة
ربيعة قال ابو الضلع السندى بذكر بلاد الهند وما يجلب منها

لقد انكر اصحابى وما ذلك بالامثل
اذا ما مُدِحَ الهند وسهم الهند فى المَقْتَل
لعمرى انها ارض اذا القطر بها ينزل
يصير الدر والياقوت والدر لمن يعطل
منها المسك والكافور والعنبر والمندل
واصناف من الطيب ليستعمل من يتعطل
وانواع الافاويه وجوز الطيب والسنبل
ومنها العاج والساج ومنها العود والصندل
وان التوتيا فيها كمثل الجبل الاطول
ومنها الببر والنمر ومنها الفيل والدغفل
ومنها الكرك والببغاء والطاوس والجوزل
ومنها شجر الرانج والساسم والفلفل
سيوف ما لها مثل قد استغنت عن الصقل
وارماح اذا ما هُزّت اهتز بها الجحفل
فهل ينكر هذا الفضل الا الرجل الاخطل،

ومن عجايب الهند حجر موسى فانه يوجد بالليل ولا يوجد بالنهار يكسر كل
حجر ولا يكسره حجر، ومن عجايبها شجرة كسيوس فانها شجرة حلوة الثمرة
تقع الحمام عليها وتاكل من ثمرها فيعشى على الحمام فتاتى الحية لقصد الحمام فان
كان على غصن الشجرة او ظلها لا تقدر الحية ان تقربها، ومن عجايبها
البيش وهو نبت لا يوجد الا بالهند سم قاتل اى حيوان ياكل منه يموت
ويتولد تحته حيوان يقال له فارة البيش ياكل منه ولا يضره ومما ذكر ان ملوك

A page of al-qazwini's Al-Athar ul-Bildol (Arabic) containing couplets in praise of India and its
(Courtesy Khwaja Muniar Ahmad)

used the lancet and the aconite as he did before and repeated the same procedure several times Finally, the haemorrhoids healed completely The man, who lived a long life, never again had this trouble and the Indian physician generously rewarded'.[32]

It may be concluded that the Arabs developed great respect and love for Indian medical scholars and products as is evident from many historical references and panegyric *(Qaṣīda)* composed in reply to the carpings of a critic by an Arab of Indian origin, Abū Dila' Sindhī (c. 9th cent A D), He says "When Indian and its arrows were admired in the battlefield my friends disliked it, but this was not proper,

By my life, it is a land where, when rain falls, it turns into pearls and ruby for those who have no ornaments,

From here come musk, camphor, amber and aloe-wood, and various kinds of perfumes for those who require them,

Here grow all kinds of sweet-smelling substances and nutmeg, and andropogonnadus;

Here are found ivory and *JAI-PHAL*, and aloes-wood, and sandal and here is found in abundance the mineral *Tūtia*;

Here are found the lions, the leopards, the elephants and the bears,

And here are found the cranes, and the parrots and the peacocks and the pigeons,

And here grow the coconut tree and the ebony tree and the pepper plant,

And here are made the unpar all swords which need not be polished, and the lances which when wielded, large armies are routed,

Who can deny the excellence of such a land except a fool? "[33]

As research scholars we are all truth-seekers *(Satya-dharma)* and I conclude with *Upanisadic* prayer

"The face of truth is hidden by a golden plate, O *Pūṣan*, do thou remove that for the vision of us who are worshippers of Truth"

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13.3

INDIAN MEDICINE VIS-A-VIS WORLD MEDICINE

P.V. SHARMA

India was never aloof and isolated from the other countries of the world and naturally it may be presumed that the process of interaction was operating among such countries Thus it would be interesting to study this aspect which influenced the course of the History of Medicine to a great extent.

Sumerian civilization is considered to be the oldest one which flourished around 3000-2400 B.C The system of medicine there was primarily magico-religious based on astrological considerations and medicine was practically in hands of priests who were divided into three classes — 1 Diviners, 2. Exorcists and 3 Physicians proper The knowledge was recorded in cuneiform tablets which were preserved in libraries. Blood was the basis of life and so was liver being the seat of blood and vitae Dreams were important in prognostication [1]

Babylon superceded Sumerian civilisations near about 2000 B C It was at its goldgen phase during the reign of Hummu Rabi (1728-1686 B C) who also advanced it culturally medicine being no exception They had knowledge about certain diseases like leprosy, plague, venereal diseases etc, but the treatment mostly depended on mercy of gods Eight specialities of medicine were developed under the patronage of eight gods The physicians used about 250 plants alongwith some animal products and inorganic substances (about 120) [2]

Assyrian kings extended their empire upto Egypt and as such the physicians there used most of the drugs included in the Egyptian Pharmacopoea such as opium, hyoscyamus, belladona, cannabis etc Attempt was made by Thompson to identify the plants used in Assyrian medicine [3]

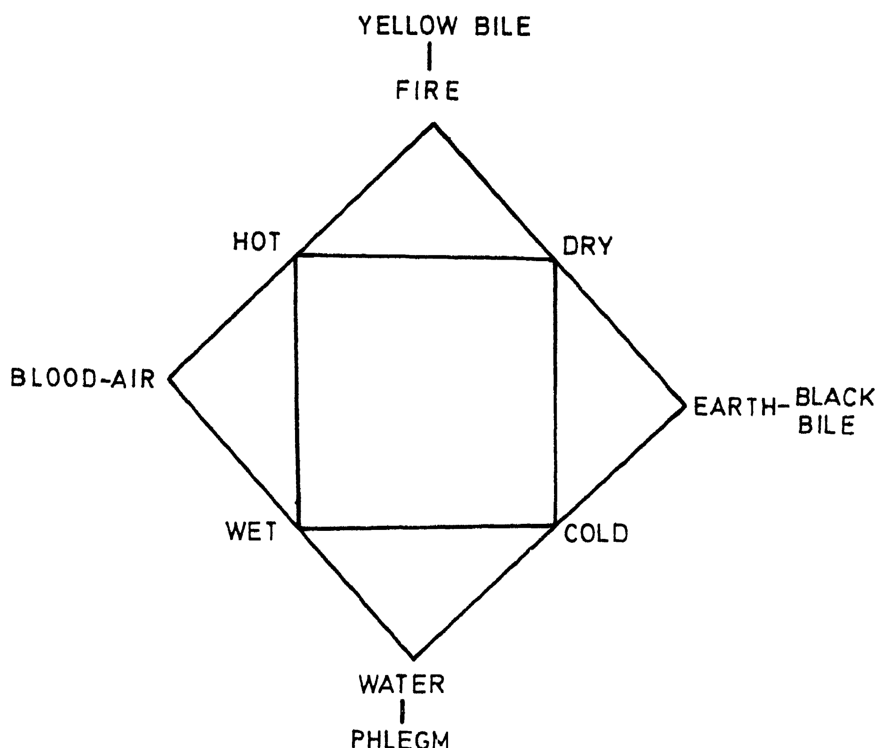
In Egyptian Medicine, a large number of drugs, as mentioned above, were prevalent which is revealed by the evidence of Ebers Papyrus (about 1570 B C). On examination of mummies, existence of a number of diseases such as arthritis, small pox, goitre etc, is proved. Egyptians had also sufficient knowledge in obstetrics Treatment, besids drug therapy, consisted of the worship of gods Imhotep was the much pupular god of healing Surgery was a traditional craft handed down from father to son [4]

In South America, the ancient civilizations like Aztec and Maya were highly developed and had their systems of medicine too in developed state though they

depended on astrology, sorcery and religion. Aztecs knew of 1200 medicinal plants including narcotics[5]. In Mexico caesarian section was known and practised In Peru also, there were good physicians of whom some were mobile treating the patients with useful drugs Besides drug therapy, worship of gods and magic were also resorted too[6]

China has its tradition quite old and apart from superstition and magic, they had a system of medicine well established on rational basis besides a well-organised pharmacopoea. Yang and Yin are considered two essential factors by imbalance of which diseases ensue Creation is composed of five basic elements — wood, fire, earth, metal and water — which are predominantly related to five main and accessory organs of the body. Pulse-examination alongwith inspection of tongue was one of the important means for diagnosis and so was acupuncture in treatment, Ephedra and ginseng were the important items of the Chinese Pharmacopoea [7]

Greek Medicine had its own antiquity, Crete, like Egypt and Mesopotamia, had reached zenith of progress nearabout 2000 B.C. As in other ancient civilizations, it had also impact of magic and religion[8] but certainly less than elsewhere Greek had the



The humours according to Aristotle

unique advantage of being the land of great philosophers who discussed and evolved concepts about creation, universe, man, life and its balancing factors. This provided a sound footing for medicine and by 6th cent B C., Greek medicine was established on rational foundation. Anaximender (560 B C) held the concept of four basic elements — water, earth, fire and air — with four specific properties — Unctuous, rough, hot and cold respectively. Pythagorus evolved a philosophy not only of ideas but also of living which influenced medicine greatly. He established mode of living based on ethical standards and recognised harmony and equilibrium as fundamental basis of life and health He also observed the importance of both body and mind and advocated use of drugs in bodily and that of music in mental disorders He supported the concept of four basic elements in two pairs consisting of opposite partners which balanced each other[9] But the real contribution of Greece was Hippocrates (460 B.C.), who revolutionised and rationalised medicine by liberating it from the clutches of religion and magic[10] and because of this he is recognised as the Father of modern medicine. His ideas are composed in books numbering from 53 to 72 which are collected together in Corpus Hippocraticus. Hippocrates held the concept of four humours and classified the human constitution on this basis He also recognised the importance of natural resistance in the body[11].

Aristotle (384-322 B.C) emphasised on the study of Anatomy and Physiology. Theophrastus was botanist and wrote treatises on plants and their medical uses. Herophilus, again, pursued the cause of Anatomy particularly in the area of nervous system [12].

Roman medicine, initially was fully under the impact of religion and magic but later on it was influenced by the advanced system of Greek Medicine. Medicine was regarded as a profession beneath the dignity of a Roman, so it was predominantly practised at Rome by foreigners mainly of Greek origin Many physicians went from Alexandria to Rome of whom Asclepiadus (124-40 B C) was the chief, Celsus, Pliny and Dioscoredes (1st cent A D) are known from their encyclopoedic works. In Roman empire, besides military medicine, several types of civil hospital, were maintained, preventive and social aspects of medicine were looked after carefully

Galen (130-203 A D.) was the most reputed scholar of medicine after Hippocrates. His works are contained in Editio Princeps in 22 volumes. He shifted to Rome and became Royal physician He established the concept of pneuma, which was the basis of life[13]

After Galen, there came the period of deterioration and because of helplessness of physicians in case of severe and extensive epidemics the people again submitted to gods for protection and thus medicine once more went into the grip of religion. Medicine became one of the aspects of religious services and church controlled and managed the activities of medical relief Surgery including blood-letting went in the hands of barbers This continued for centuries together during the medieval period [14]

Arab emerged as a big power not only politically extending its empire upto Middle East, Egypt, North Africa and Spain but also as a messenger of cultural breakthrough.

The latter object was fulfilled mostly during the period of calilphs. Among them the first was Harun-al-Rashid (763-809 A D) who established hospital at Baghdad where physicians from Greece and India were employed He also established a library where medical books from both these countries were procured and collected. Moreover, arrangement for translating these books into Arabic was made and accordingly 15 important texts of Indian Medicine like *Caraka, Suśruta, Vāgbhata, Mādhavanidāna* etc , alongwith those of Greek Medicine such as the works of Hippocrates,Galen, Dioscoredes were made available in Arabic translation. Thus Arab acted as bridge between Indian and Greek Medicines and provided good and close opportunity for interaction between physicians of these systems Thirdly, by synthesis of these two systems a third system was evolving which formed the nucleus of modern European Medicine on one side and Unani Tibb on the other

Rhazes (865-965 A D) and Avicenna (980-1037 A D) were two outstanding figures in Arabic Medicine who contributed a lot to the medical literature which influenced the medical world for a long time. The canon of Avicenna was translated into Latin in 12th cent A D and was a text book in European medical institutions for long[15].

Parallelism between Indian Medicine And other Medicines

A large number of instances show parallelism in thought of Indian medicine and medicines of other parts of the world

As astrology had great impact on Sumerian medicine, Āyurveda also recognises importance of stars and constellations in health and disease They were also considered in collection of drug and other performances Above all, the sun and the moon controlled the destiny of man The year is divided into two parts — *ādāna* and *visarga*. The former is due to predominance of the sun while the latter has predominance of the moon The sun provided energy and destroyed diseases while the moon nourished living beings and was recognised as 'King of herbs' *(osadhīśa)* Sumerian Medicine recognised blood as the basis of life so does Indian Medicine. In prognostication, importance of dreams is observed in both, one entire section *(indriyasthāna)* is devoted to this topic which considers dreams as indicators of the condition of diseases and their fatality. The oil-drop test was also an important means employed by Sumerian physicians to decide the prognosis of diseases A drop of oil was put on the surface of water, if after going down it again came up it indicated incurability of the disease Such oil-drop test is found in later Āyurvedic texts In *CS*, a different test in water was performed in relation to semen, urine and stool If they drowned, they indicated the adverse prognosis There were two types of physician in Sumer one who practised drug therapy while the other believed in magic, charms etc In Āyurveda and even earlier in *Athravaveda*, both those types are found

Babylonian Medicine regarded moon as 'King of herbs' and so does Āyurveda, like the eight aṅgas of Āyurveda there were the same number of the specialities in the Babylonian Medicine

Assyrian Pharmaeopoea had powders, pills, sticks, enemas etc like those in Āyurvedic one. The measures like oleation, sudation etc, are also similar in both Names of a large number of drugs are similar in both languages Preservation of dead bodies was commonly done in Egypt, it was also prevalent in India in some modified form Here dead bodies were kept in oil-tub for preservation Specialists in different branches of medicine were found in both Worship of the sun was prevalent in both the countries Importance of purification therapy was recognised by both

Chinese therapy of Yin and Yang is parallel to that of the concept of *Prakṛti* and *Puruṣa* in India The concept of five basic elements in Chinese Medicine is similar to that in Indian Medicine with certain modification The Chinese also regard disequilibrium as cause of disease

There is striking parallelism between Greek and Indian Medicines The theory of humours is quite similar in both systems Greeks accept four humours-phlegm blood, yellow bile and black bile which are corresponding to *kapha, rakta, pitta* and *vata* It may be noted that looking to the importance of blood in causation of disorders blood was also taken as the fourth dosa for practical purposes This is based on the concept of four *bhūtas* — air, fire, water, and earth — with their specific properties — cold, hot, untuous and rough responsible for health and disease Importance of *āmadosa* in pathology is recognised in both, Greek Medicine like Āyurveda has divided fever into three stages — *āma, pacyamāna* and *pakva* In examination of patients, importance of physiognomy, constitution, time, place etc. is recognised in both Similarly is the consideration of prognostics Hippocrates has discussed particularly the causation of diseases due to impurity of air, water, and place Caraka has also discussed about them in the context of epidemics The Hippocratic oath is similar to that given in *Sadvṛtta* of *CS* Over and above, concept about foetal development, surgical operations, cauterization, blood-letting, surgical instruments etc , are similar in both[16]

The Greek doctrine of pneumatism as established by Hippocrates in his manual *On Breath* is almost on the same lines as disscussed in detail in Āyurvedic Samhitās[17].

Plato, in his Timnaeus, mentiones many things which are similar to Āyurvedic concepts such as diseases caused by pneuma, phlegm and bile, names of fever, channels in the body like those in gardens, existence of a fire in eye etc[18]

Communication Between India And Other Countries:

It is a matter of speculation whether such parallellisms are only accidental or coincidental or products of mutual interaction from actual contact In the last alternative which seems to be more plausible, we have to search for the communication between India and other countries of the world It is proved that India never opted to remain isolated from the rest of the world but has been taking keen interst in international affairs since early times participating actively in mutual exchanges

Even in prehistoric times, India had commercial contacts with Mesopotamia[19] Vāveru-jātaka indicates the trade connection between India and Babylon In Babylon there were settlements of South Indians which contributed many South Indian words in Greek vocabulary through Babylon Similar connection existed between India and Assyria[20]

India was also in contact with Egypt since antiquity Indian goods reached the Egyptian market through merchants, many Indian merchants also settled there A number of vegetable drugs and spices reached Egypt from India[21]

Long before the Alexander's invasion, India came into close contact with the Greek people and physicians during the empire of Achaemenian Persians. Cyrus (558-530 B C) annexed in his empire a portion (Gāndhāra) of India Thereafter during the reigns of Cambysus (550-522 B C) and Darius I (522-465 B C), this contact became much closer Persian kings employed both Greeks and Indians in their services including physicians like Demokedes There was a land route connecting India and Greece through Asia Minor by which scholars visited from one to the other country After the invasion of Alexander, contact between India and Greece became closer and stronger during the period of Mauryas Indian traders even reached Alexandria and as such the name 'Alasanda' became widely known in India[22] Therefore, Filliozat is right in concluding that there is every probability of Plato and Hippocrates being influenced by Indian thought and concepts through Persian empire[23].

Greek impact is observed evidently on Indian Astronomy which is also acknowledged by Indian authors Varāhamihira says that Yavanas (Greeks) are *mlecchas* but this science (Astronomy) is well established in them and as such even they are honoured like sages There is also mention of *Yavanācārya* But such mention or indication is not found in any medical text It shows that though in astronomy the stream of knowledge flowed from Greece to India in case of medicine it was in reverse direction If during the course of interaction something came to Indian side it might be quite negligible In medicine as well as surgery, India was highly advanced in comparison to other countries and as such any borrowing on its part from the other side does not seem to be probable

India was in contact with China since early times Under the Kushan empire, the trade-route became easier from China to Caspian Sea Bāhlīka was an important centre where traders from China, India and Western Asia met together and exchanged ideas and commodities Gradually during the Gupta Empire the link between India and China was firmly established on cultural basis The Buddhist monks and scholars went to China to propagate their ideas Fahia visited India during Gupta period The University of Nālandā established during the reign of Kumāragupta attracted a large number of scholars and students from China Ywan Chwang,a Chinese traveller,who came to India during the reign of Harsavardhana stayed at this University for a number of years Shortly afterwards another Chinese traveller Itsing visited India Āyurveda reached China with Buddhist monks and many Ayurvedic texts were translated into Chinese

As said earlier, Arab was much influenced by Indian medicine and a number of Āyurvedic texts translated into Arabic were read and taught there. Thus Indian Medicine contributed to the foundation of Arabic Medicine In fact, the edifice of Arabic Medicine was erected on the foundation of Indian Medicine with Greek Medicine as superstructure Canons of Rhazes and Avicenna, for a long time, were prescribed as textbooks in medical institutions of the West Thus here also Indian Medicine indirectly influenced the western medical thought A number of Indian drugs were introduced in Arabic Pharmacopoea, on the other side, some useful drugs were borrowed in Indian pharmacopoea

Pulse-examination, so common now, was not in vogue in India when Itsing visited (7th cent A D) while it was commonly practised in China In Indian medicine the formal pulse-examination as a means for diagnosis of diseases is not found before 12-13th cent A D when Śārṅgadhara first described it In development of this science, the role of foreign impact can not be ignored

Thus, by a general survey of the contemporary World Medicine, it is quite evident that

1 Medicine in India was quite advanced in terms of theory as well as practice in comparison to that in other countries

2 Indian Medicine was never isolated rather it reached distant corners of the world utilising the already established channels of communication.

3 Thus it came into contact with medicines of almost all the countries and had meaningful interaction with them

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14

DEVELOPMENT OF INDIAN MEDICINE THROUGH THE AGES: A RESUME

P.V. SHARMA

Preservation of the body is the instinctive need of the living being and as such desire for health is one of the basic characters of man, '*Esaṇā*' (desire) has been described in the Upanisads but in *CS putraiṣanā* is replaced by *Prānaiṣanā* perhaps because *Prāna* (vitality) is more important than *Putra* as the latter depends on the former

It was natural, because of the above, that man began to contemplate on modes and measures to maintain his matreial frame in best possible condition by preventing illnesses and counteracting them if they appeared Thus medicine as art began perhaps with the creation of man and will continue till life and intellect are there That is why Āyurveda (knowledge of life) is called as beginningless (*Anādi*) and eternal (*Śāśvata*) Suśruta went a step further by saying that it was arranged prior to creation so that it should be available to creatures immediately when needed All this indicates only one thing that man has brought health and disease in his basic constitution and as such has been thinking and doing on it since beginning of creation

In prehistoric age when no civilization was there the primitive man collected the food material from his environment which consisted of animal products and plants It may be conjectured, naturally, that in case of illness too he depended on these materials He might be taking, in such cases, some tuber, root, leaf or fruit of a plant or some animal product Alongwith it, out of fear from the ferocious nature, he also might wearing some talisman on his body and worshipped some deity Initially he might be taking fresh plant parts after crushing with his own teeth but it would also not be illogical to think that in palaeolithic age later he might be using plant substances as drugs after grinding them on stone slabs

By the time of the Indus Valley civilization (2300-1700 B C) it was manifestly a bit advanced which is evident from the practice of cultivation of food grains, systematic arrangement for sanitation and use of various substances as drugs The tradition of tree-worship shows great respect for plant kingdom because it provided both food as well as drugs Apart from the plants and their products, animal products like stag-horn (*Mrga-śrhga*) and cuttle-fish (*Samudraphena*) were in use as drugs Remains of *Śilājatu* have also been found which indicated its prevalent use These substances are still being used in Āyurvedic medicine and thus it is suprising that such a long tradition has not been affected in any way Above all, Lord Śiva with the Goddess was there who

is regarded as the first divine physician (*Daivya Bhisak*) and is the originator and destroyer of the first disease *Jvara* (fever) Caraka prescribes worship of the Lord with Goddess in case of the severe condition in fever when all human efforts failed.

In Vedic age (2000-1000 B C.) the sages were deeply thoughtful to know about the nature and its miracles and also as to how the human problems relating to day-to-day life could be solved They, on one hand, offered prayers to gods of Nature for providing them affluent means and happiness in life and protecting them from disease and death and, on the other hand, they also studied the Nature with their keen observation and discovered many things beneficial for maintaining their health and alleviating the diseases. They observed particularly the movements of animals as to what they ate and drank in the states of health and disease and what were the effects on them The prayer that whatever cows, sheep and goats graze may provide happiness to man evidently presupposes knowledge of the pharmacological effects of those herbs based on observation. It is confirmed by the fact that the groups of drugs promoting lactation and urination as defined by Caraka contain grasses commonly grazed by these animals Similarly, the animals also discovered remedies for their ailments instinctively and used to run to that herbwhen the particular affliction came, for instance, mongoose digs the root of a plant and takes it while fighting with snake to protect itself from poisoning Thus *mantra* combined with drugs was the approach towards health problems.

In Ṛgveda (about 2000 B C), the position is seen much advanced Many plants were defined with their names and forms which were governed by the king Soma. The miraculous feats of the twin Aśvins in medicine and surgery definitely present the picture of a physician who is skilled in the arts both medical and surgical and is always ready to help the needy with all means. Aśvins are the symbol of an ideal physician who is well versed in total arts without any compartmentalisation or specialisation as is seen in later age, nor was there manifestation of the basic concepts of Āyurveda The Vedic seers had clear idea about the two types of disease — innate and exogenous — and as such a hymn says that the physician is he who tackles both

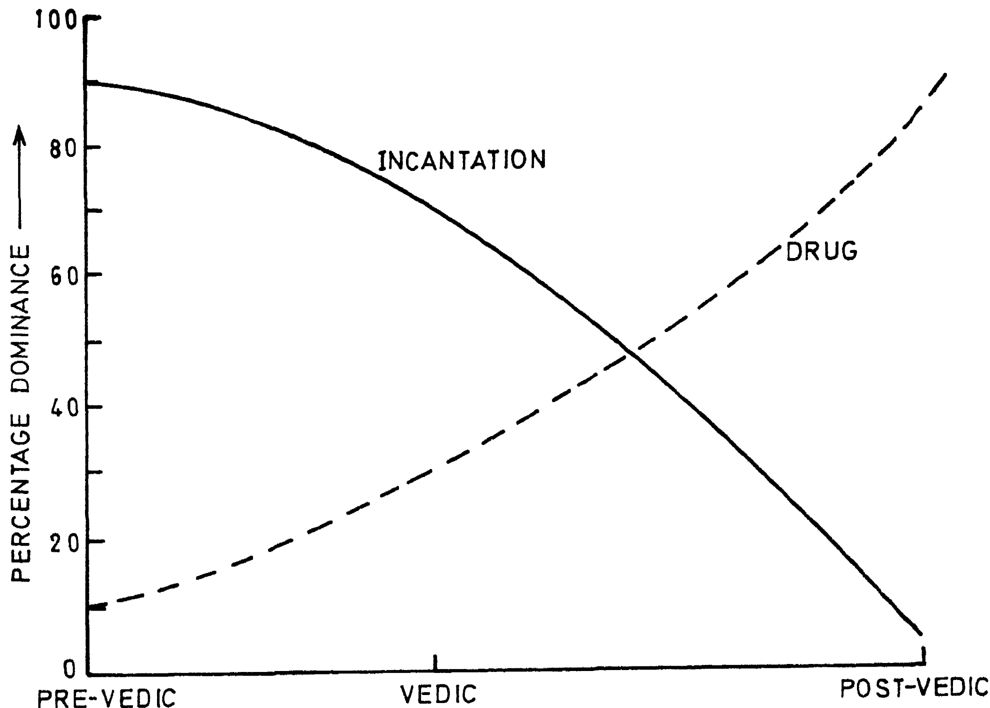
Atharvada (about 1500 B.C.) mentions quite a larger number of plants and other substances used as drug. It also recorded various disease-syndromes which were defined by that time and were also given specific names. *Takman* was the name of Jvara Of these names some were dropped later on probably replaced by more suitable ones while some like '*Rājayaksma*' continued for ever Specific treatments were also formulated for these diseases which consisted of drugs and incantations Drugs, apart from being used internally, were also worn on the body as amulet (*Mani) The concept of Tridosa-Vāta, Pitta* and *Kapha* — which is the scientific basis of Āyurvedia was much more clarified than in the Rgvedic age Here *Vāyu* with its types is described at many places, *Pitta* is also explicitly mentioned with its igneous character and *Kapha* is indicated by the word '*Balāsa*' which is still a synonym of the same

The period of Brāhmanas and Upanisads (1500-1000 B C) contributed considerably in clarification of concepts and facts The word '*Śleṣman*' is used first time in *Śatpatha Brāmana* which was accepted universally the term for the principle

which is now commonly known as *Kapha* '*Śeeṣman*' denotes the sticking nature while '*Kapha*' signifies its water content In order of historical sequence, the words denoting *Kapha* may be placed as follows -

Balāsa —≳ *Slesman* —≳ *Kapha*

Kapha is evolved quite late. In *Upanisads* we find somewhat developed position of the knowledge about physiological processes such as digestion and metabolism as well as circulation of blood The function of heart (*Hrdaya* = *Hṛ, da, ya*) is clearly defined as receiving (*hr*) and pumping (da) blood by its constant movements (*ya*). On the basis of colours, different types of vessels were recognised The ingested food, after digestion is converted into three parts — fine, medium and gross which add respectively to mind, *dhātus* (muscles etc) and excretions The later texts left the first one and described only the latter two as *Prasāda* and *Mala* thus undermining the effect of food on mind The period of *Upaniṣads* was an age of intellectual ferment when different types of concepts and doctrines were being discussed and formulated. This environment of free discussion and broad outlook combined with reasoning provided a congenial environment to medicine-men for formulating the basic concepts and their own philosophical doctrines deviating from orthodox traditional approach. Thus in the Vedic age ground was fully prepared for the rational medicine which was busy in its make-up to the stage shortly



Graph Showing relative predominance of incantation and drug in therapeutics

In the pnmitive stage the role of drug was at its minium, the incantation therapy predominating In the Vedic age, the drug therapy developed further and in the post-vedic age the position was quite reversed, the drug therapy gaining upper hand while the role of incantation dropped to the minimum This change is so obvious and spectacular that it may be taken as the characteristic feature of the different ages The relative position of *Mantra* and *Osadhi* in the three ages is clarified in the graph

This was the cultural and philosophical background in which at about 1000 B C. the compendium of Āyurveda came into existence This was the *Agniveśatantra* which was composed by collecting the preachings of Punarvasu Ātreya, the Founder of the School of Medicine. This was an age of diversification and as such compendia were written in other specialities as well like that in medicine The *Suśrutasamhitā* became the representative text of the School of Surgery founded by Divodāsa, the king of Kāśī The eight parts of Āyurveda were defined in this age and treatises amd compendia were written on almost all the specialities

This was the age of rationalism when the rational therapy was given its due position, of course, not at all deleting the *Mantra* therapy The basic concepts of *Pañcabhūta, Tridosa, Rasa-Guna-Vīrya-Vipāka-Prabhāva,* and *Saptadhātu* were clearly established on sound footing on which the huge edifice of Āyurveda was erected This firm foundation gave it the longevity which it transmits to the mankind. Disease-syndromes were demarcated with their characteristic signs and symptoms and were described in all aspects The pathogenesis of every disease was explained on the basis of pathological factors (*Dosa-Dūsya*) so that the treatment might proceed according to that on rational lines Diseases were also classified from various angles so that their true nature could be understood properly Likewise, the remedial measufes were also prescribed in a classified way The drugs were also classified according to action and uses Theory of causation was propounded and the means of valid knowledge (*Pramānas*) were described with the particular injunction that the physician should proceed after thorough examination and with full knowledge of the case However, the reason was flexible keeping in view the biological varitions based on individual constitution (*Parkrti*) which, like mother nature, receives the external interferences including medical and is finally the saviour of the person

This was, in fact, dawn of rationalism which awakened the mankind to apply the established concepts in other biological areas too Consequently, on the pattern of human medicine, medicine in relation to elephants (such as of *Pālakāpya*), horses (that of Śālihotra) and cows etc. were developed and treatises written on them Even plants could not escape and were brought under the jurisdiction of *Vrksāyurveda* Thus medicine covered almost all the corners of the biological field

This was the peak of intellectual advancement which is testified by the epics, *Purānas* and other non-medical sources The literature in Buddhist and Jaina traditions is also replete with such materials

The theoretical foundation was established during the period of Ātreya-Agniveśa but for practical expansion it required royal patronage and people's support which was

provided by Buddhists Buddhism, as it stands on the medical base, had a mission to treat and nurse the sick and as such the Buddhist Vihāras acted as centres of medical relief Medicine of India also, alongwith Buddhism, reached far and wide in other countries Thirdly, as Buddhism had patronge of kings like Bimbisāra (6th cent. B.C) of the Magadha empire and also of traders and merchants, medicine too naturally received their patronage and generous support. This period synchronises with the golden period of Takṣaśilā which had teachers like Ātreya who produced disciples like Jivaka The latter had such legendary expertise and fame that the sick people only to be treated by him accepted Buddhism as he did not find time to take up patients other than those belonging to the Buddhist order and Lord Buddha himself The real and manifest expansion and establishment of hospital services was effected during the reign of Aśoka the great (272-232 B.C) He established a chain of hospitals in the country and organised public medical relief on systematic lines and under Government control. This was, in fact, a revolutionary step which changed the shape of the medical services altogether

Kaniska (1st cent. A D) followed the line and as his empire extended to central Asia touching the borders of China, Āyurveda went to those distant regions with the Buddhist missionaries. The Buddhist monks carried with them some essential medicine and a bandbook of medicine Among such books, the *Nāvanītaka* was quite popular which reached Central Asia where it was discovered by Bower.

Like Buddhists, Jainas also contributed, to promotion of the medical science It is to be noted that all sects of religion, irrespective of differences, promoted medicine alike, of course, with slight modification according to their cultural background. Both Buddhists and Jainas contributed to expansion of Āyurvedic literature by composing various treatises on different aspects of medicine

During the period between Aśoka and Kaniska Caraka appears on the scene who redacted the old *Agniveśatantra* making it fitting to the requirements of the times. He further consolidated the earlier establishments and recorded the contemporary practices The description of the hospital given in *CS (SU* CH 15) most probably corresponds to the pattern of the hospitals established by Asoka Caraka is a mysterious name and the change of the title of the '*Agniveśatantra*' to the *Carakasamhitā*' is also equally mysterious There was a sect of wandering mendcants known as 'Caraka' which is often mentioned in texts with Nirgranthas and Ājivikas Though on Ājivikas many scholars have attempted, the Carakas are quite ignored which, if studied seriously, may throw important light on the details about the author of the *Carakasamhitā* There is controversy whether Caraka redacted the entire *cikitsāsthāna* or only the first thirteen chapters, but it is certain on the evidence of Mārkandeyapurāna that at that time it had only thirteen chapters

Now we enter into the golden age of the Indian History known as the Gupta period During the reign of the Gupta kings the position of Āyurveda was further consolidated and facilities for teaching of medicine and medical relief were provided amply The University at Nālandā was established during the reign of Kumāragupta I (414-45

A.D.) in which medicine was prescribed as one of the compulsory subjects As regards medical relief, the state services to great extent were strengthened and expanded As Fahian states, there was, during the reign of Candragupta II (375-414 A.D.), a big hospital at Pātaliputra in which people from all over the country came and received the best medical treatment. The poor were provided also with food and other necessities free of charge.

Gupta period, in a sense, was also the period of renaissance when the old treatises on different disciplines were looked into and were made upto-date after proper redaction. Probably the Āyurvedic Samhitās too could not escape this process. During the same wave, Dṛdhabala, a scholar from Kashmir, redacted the Carakasaṃhitā and also removed its deficiencies by reconstructing its lost portion, which amounted to one-third of the text This he did on the basis of other texts then available

During the preceding ages big compendia were composed on different specialities and by the time the literature of medicine became so vast that it required a long time to learn them which an ordinary student wishing to become a general physician could not afford. Secondly, to become a general practitioner it was not at all necessary to undergo such a lengthy process. Hence the Time-Spirit demanded a handbook which contained essentials of all the parts of Āyurveda and might serve as a guide for general practitioners This need was fulfilled by Vāgbhata who wrote the *Astāṅgahrdaya* by collecting materials from the important Samhitās particularly the *Carakasamhitā* and the *Suśrutasaṃhitā*. Because of filling up a long void, the Astāṅgahrdaya became very popular and found position in the Great Trio about which Itsing, a Chinese traveller (7th cent A D), has referred Vāgbhata, actually, founded the tradition of compilations which put an end to the original writings like those of Caraka and Suśruta. He stands at the juncture of compendia and compilations

On the policy of compilation, texts on diagnosis and treatment were also written separately for convenience of physicians who could not study the voluminous texts Among them the Mādhavanidāna (7th cent A D), a text on diagnosis, became quite popular. It arranged diseases in a definite sequence which was followed by later authors like Vṛnda and Cakrapānidatta. Tīsata and Candraṭa also wrote their treatises on medicine.

Simultaneously with the compilatory works, commentaries on the ancient Samhitās also began to be written which became necessary because of the long gap of time elapsed after the composition of the ancient Samhitās and consequent difficulty in interpretation of the original text. The reason behind this was that compilations being based on the early Saṃhitās the latter were sought to testify to the authenticity of the former and as such were often quoted as authority Bhattāra Haricandra, a scholar physician of versatile genius, was probably the first commentator who authored probably the first and the excellent commentary '*Caraka-nyāsa* on the *Carakasaṃhitā*.

Right from the Gupta period, the rise of Tantricism is observed, its origin is traced from Asaṅga (4th cent. A D.), the elder brother of Vasubandhu, the great Buddhist

scholar. From Indrabhūti (7th cent A.D) who founded Vajrāyāna it took a different turn which had great impact on medicine in India. Under its patronage and philosophy a new branch of mercuial processings was developed which is known as *Rasaśāstra*. It defied the traditional system and propagated the use of mercurials which required no consideration of *Tridoṣa*. Thus it hit harshly at the very root of the doctrine of Āyurveda which changed its future course completely The present disease-based treatment without considering *Doṣa-Duṣya* is mostly due to the impact of *Rasaśāstra*. But as Indian culture believed in assimilation and synthesis, *Rasaśāstra* too was assimilated and merged in the main stream of Āyurveda

As Āyurveda flourished in North, the Siddha medicine emerged and developed in South under Dravidian culture It has evidently imprints of *Rasaśāstra* using mostly mercurial and other inorganic preparations alongwith Tantric cult

India never opted to remain aloof, rather it maintained links with other near and far off countries. There are evidences that there was trade link of India with Mesopotamia during Indus valley civilization and later In this way, a number of Indian drugs were introduced there During the period of Caliphs particularly due to the patronage of Barmecids there arose a close contact between India and Arab A number of physicians were invited there to treat serious cases and to work in hospitals Besides, a good number of Āyurvedic texts including Caraka and Suśruta were translated into Arabic which influenced not only the Arabic medicine but also the Greek medicine indirectly.

As Filliozat says, Greeks were in contact with Indian physicians long before the invasion of Alexander particularly during the reign of Achaemenians. A number of Greek physicians including Pythagorus seemed to have visited India. The parallelism of ideas in the works of Hippocrates, Plato and others testify to it Similarly it had also influenced the medicine of other countries Tibet was since early times in close contact with India From Tibet students came to Nālandā and Vikramaśilā Universities and scholars from these Universities went to Tibet who translated the texts of Āyurveda in Tibetan Thus Tibetan medicine is primarily based on Indian medicine

In conclusion, it may be said that medicine in India gradually dissociated itself from superstitions and exorcisms and developed into a scientific medicine long before Hippocrates This pace continued till Gupta period after which compilations and commentaries came This may be put chronologically as follows.-

1000-500 B.C	— Age of compendia
500 B C.-500 A D	— Age of consolidation and expansion.
500-1000 A.D.	— Age of compilation and commentary.

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